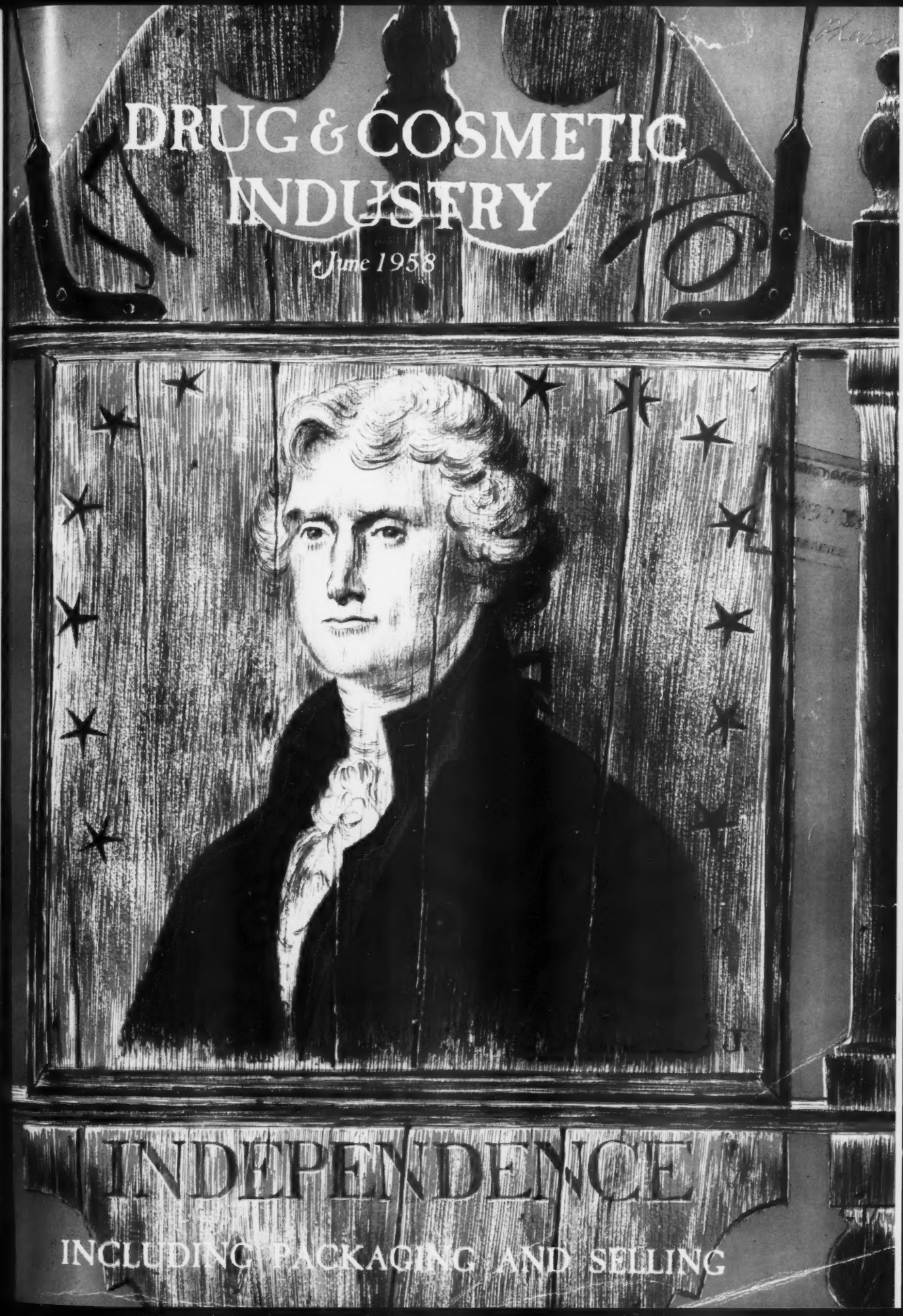
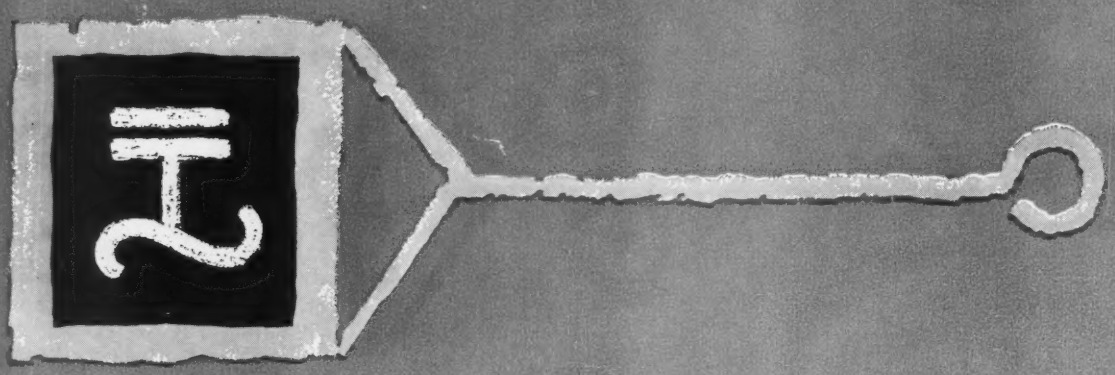

DRUG & COSMETIC INDUSTRY
June 1958
INDEPENDENCE
INCLUDING PACKAGING AND SELLING



DO YOU UNDERSTAND WHAT THIS N BRAND STANDS FOR?

Money, it stands for, mostly.

Use good scents, Norda scents, to make money. Products perfumed for any purpose seem to have the smell that will sell, when Norda odors make them distinctive. "With Norda scents" brands the best, quite often.

Norda makes good scents

Norda®

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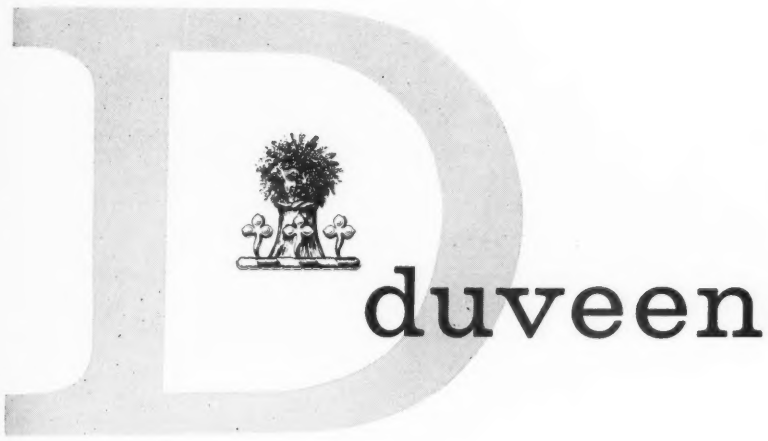

DUVEEN SOAP CORPORATION
36-14 35th STREET • LONG ISLAND CITY 6, N. Y.
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Drug and Cosmetic Industry

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Standard White Oils

STANDARD White Oils meet or surpass the highest requirements for uniformity, purity, high quality. If you manufacture baby oils or any cosmetic or pharmaceutical product, get the complete story on STANDARD White Oils. Call your nearby Standard Oil office anywhere in the 15 Midwest or Rocky Mountain states. Or write Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.

Standard Oil Company
(Indiana)

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SMART MERCHANDISING STARTS YOUR PROFIT PICTURE!

Product Performance Keeps It Running

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BASIC ANTI-PERSPIRANT INGREDIENT FOR GELS

(sodium aluminum chlorhydroxy lactate complex)

– available as a 40% w/w solution for use in making Cologne type sticks.

The merchandising techniques for introducing customers to your anti-perspirant and deodorant product may vary. But one factor is all-important in holding those customers... how well does your product do the job it's supposed to do! That depends on the basic ingredients you put into it. Superior performance translates into a superior selling record for your product.

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CHLORHYDROL (aluminum chlorhydroxide complex)—for anti-perspirant creams, lotions, sprays and powders.

CHLORHYDROL S-5 (aluminum chlorhydroxide complex – modified) – for anti-perspirant gels.

Reheis can tailor any one of their anti-perspirant chemicals to meet the needs of your products. We suggest you write for free data and samples... and learn how Reheis quality can add to your profit picture.

REHEIS CHLORACEL Anti-perspirant gives *your* product *all* these advantages.

- **Effective anti-perspirant action**
- **Fine deodorant qualities**
- **Non-destructive to fabrics**
- **Non-irritating to skin**

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REHEIS COMPANY, INC.

Manufacturers of Fine Chemicals

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ERFUME OIL CONCENTRATE FOR PERFUME, TOILET WATER, SACHET, BATH OIL

DOW CHEMICALS... some "do nothing" wonderfully well

Many of the chemicals Dow makes go into drugs and cosmetics as *active* ingredients. Also behind the scenes of many popular product successes are chemicals that do nothing more than help other ingredients do a better job. They dissolve, couple, hold together an entire cast of active ingredients. Like the conductor of a great symphony they harmonize, coordinate, get a little bit more than the best out of many brilliant individual performers. And, the happy result in the case of drugs and cosmetics . . . sweet sales music. These notes are about several such chemicals and some of their active brothers.

You may wish to check certain items in this advertisement and forward to those concerned in your company.

Route to:

_____

_____

_____

_____

CLOUDY PRODUCT PROBLEMS CLEARED UP

by low-toxicity Dowanol DPM!

Tomorrow's sales forecast for alert manufacturers of cosmetics and drugs: "Cloudy product condition to clear up soon, impulse appeal, compound stability to reach new highs. Sales outlook sunny!"

The reason: good news out of Midland tells of Dowanol® DPM (dipropylene glycol methyl ether), a new solvent safe to use to roll away the "clouds" of product breakdown. Enthusiastic trade comment says: "Now it is possible for formulators to get all the benefits of this super solvent in concentrations as high as 15%—and with safety from toxic effects!" Here's what it can mean in terms of product improvement . . .

Stormy sales weather threatened the manufacturer of a well-known lotion. Bright as a dollar when it left the laboratory, the hazards of shipping, storage, a cold climate, would cause it to cloud up like a miniature thunderhead. Customers began to pass it by for brands that stayed unclouded and bright. Though the lotion *worked* as well as ever, it had forfeited the powerful psychological advantages of clarity, purity, cleanliness.

Dow chemists were called in. They analyzed the trouble as product separation caused by a solvent that wasn't doing a job. A switch to Dowanol DPM was suggested, promptly tried. What happened made sales history. DPM did a perfect job of coupling troublesome, quarrelling ingredients . . . and resisted low temperatures as effectively as a mink coat. Low temperatures, which are often a shipping condition, no longer present a problem, for Dowanol DPM prevents precipitation of ingredients at low temperatures. Products now arrive in the same high quality as when originally packaged.

Even the most cautious cosmeticians are impressed by the skin-patch tests conducted by Dow using Dowanol DPM. DPM was applied to the skin of 125 men and 125 women. *Not a single one of the 250 subjects showed the slightest evidence of irritation or sensitization!*

More and more applications of Dowanol DPM are awaiting the creative

The "look of it"—in the bottle, on the shelf—is a major factor in the success of today's profitable cosmetic products.

imagination and ingenuity of the cosmetic and drug industry. Uses it is already being put to: perfume fixative, solvent in nail polish lacquers, extraction and crystallization agent in the manufacture of antibiotics. In fact, the warm reception accorded DPM has made it necessary to add to the Midland, Michigan facilities.

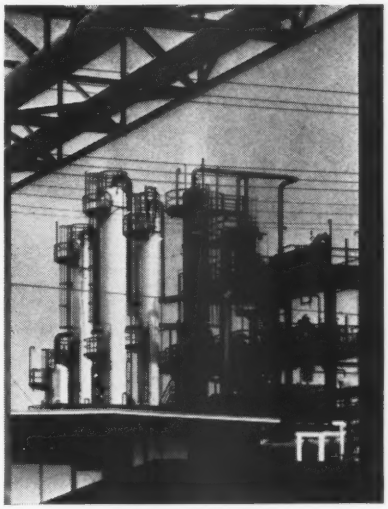
Happy Birthday For Glycerine . . . *and you!*

Storm the Bastille! Ten years ago a revolutionary development — the creation of synthetic glycerine—freed the drug and cosmetics industry from the need to rely on foreign sources or the by-products of soap production for supply. (Too often it was "no soap" when they badly needed this basic chemical.) A few years later Dow made shipments in commercial quantities.

Cosmetic chemists will recall, and celebrate, two important results of this revolution: *First,* price was permanently stabilized. Products employing $C_3H_5(OH)_3$ could now be planned without fear of widely fluctuating price swings. America's supply had become steady and dependable, thanks to Dow and other synthetic supply.

Secondly, man-made glycerine was found to be better, with higher glycerol content, greater purity and clarity. Dow now makes three grades of glycerine . . . synthetic (industrial), USP, and USP 99.5%.

To celebrate glycerine's declaration of independence, Dow suggests you join the party by writing for samples of all three Dow grades. The difference this can make in end-product quality is obvious. And, as one formulator said: "Vive la difference!"



New plant facilities keep pace with increasing demand for glycerine.

DOWICIDE . . . *because product "face" is important*

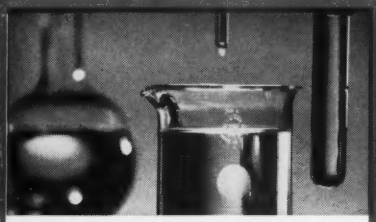
Merchandisers have sometimes seen their brands "lose face" in world markets because of the onslaught of the microscopic world of bacteria and fungi.

Several Dowicide® products were created by Dow chemists a few years ago. These preservative chemicals with low order of toxicity and irritation set up a microbial barrier to organisms. Otherwise these organisms break down cosmetics causing alterations in odor, color, texture, that causes the fastidious user to change her brand.

In the packaging field, too, "face" is protected by Dowicide preservatives. Your package, thus protected, will enjoy a longer and brighter shelf-life, a look that always says to shoppers, "choose me", whenever there's a brand choice to be made.

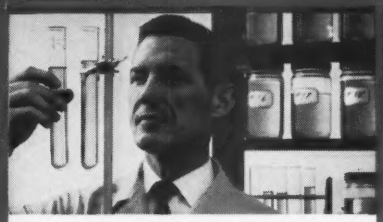
If the crystal ball is cloudy, why not clarify the sales forecast for your brands by consulting with Dow chemists? They can build new sales appeal into products that will give them a distinct edge in today's edgy market. Write: Chemicals Sales Department 755D, THE DOW CHEMICAL COMPANY, Midland, Michigan.

DOW CHEMICALS . . . *4 more of interest*



Methylene Chloride . . . *Extractor extraordinary.* Versatile Dow solvent used as an extraction agent for oils, fats, waxes, perfumes, flavors, drugs, antibiotics, vitamins.

Triethanolamine . . . *All in a lather.* This high-quality, low-color product is used as an active foaming and lathering ingredient for shampoos, hand creams, etc.



Polyethylene Glycols . . . *from "the men that make the World's widest line of Polyols".* These Dow chemicals are water-soluble emollient products.

Aromatics . . . *Rose, Muguet, then some.* Stable and efficient, synthetic perfumery raw materials with beautiful names like Coumarin, Dorisyl®, Rosaryl®, Citroviol®.

DOW CHEMICALS *basic to the drug and cosmetic industry*

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Fine Chemicals • Pharmaceutical and Medicinal Intermediates

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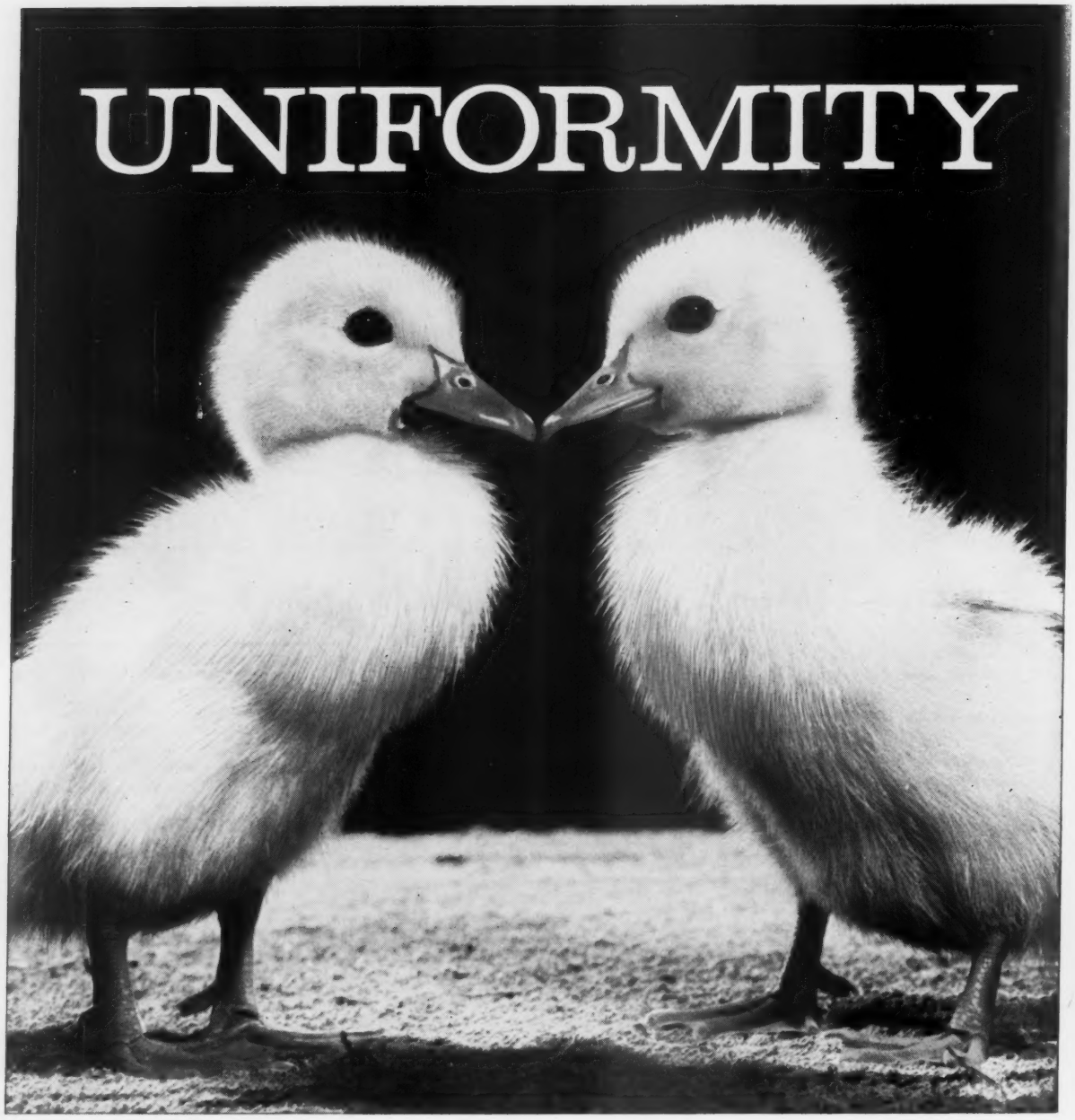

Columbia-Southern Sodium Bicarbonate U.S.P. gives you superior quality control

Made to highest standards, Columbia-Southern Sodium Bicarbonate U.S.P. is produced in powdered and granular grades to meet your individual requirements. The consistent uniformity from shipment to shipment assures you of superior quality control, smoother blending, lower production costs.

Whether you compound or re-package, always specify Columbia-Southern Sodium Bicarbonate U.S.P.—pure, white and free-flowing.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION
SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY
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IN CANADA: Standard Chemical Limited and its Commercial Chemicals Division

FELTON'S NEW LINE OF COMMAND . . . MASCULINE SCENTS

For men only—Felton's vigorous new perfume group is yours to command. Again, Felton's unique combination of experience, skill and instinct has achieved the unmistakable *eau de success*. Here are all the lures you require for tracking down today's tremendous masculine market.

For big game . . . **Beau Brummel #1256,** a he-man odor with distinctive woody, dry bottom note. **Esquire S.T. #20** and **Esquire Country #20** appeal to aristocratic tastes, an original aroma with beautiful dry notes.

For the outdoor species . . . **Fleurs de Tabac #6-1204,** a tobacco and leather character, which stands out, even in the lowest concentrations. All are compounded for complete flexibility . . . for sales-appealing toilet waters, after-shave colognes, talcs and aerosol products.

Perfume compounders will find Felton's new bases stimulating tools for building new compounds or for improving existing lotion, talc or aerosol scents:

Adamal, rich in fine woody notes, dryness tinged with precious resinous notes. **Brummel Base #1156** can be used from 5-15% in existing compounds for a woody-dry bottom note of strong masculine appeal. **Aldicuir,** a unique "natural" base with rich, true leather note.

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Sales offices and plants in major cities, Canada and overseas.

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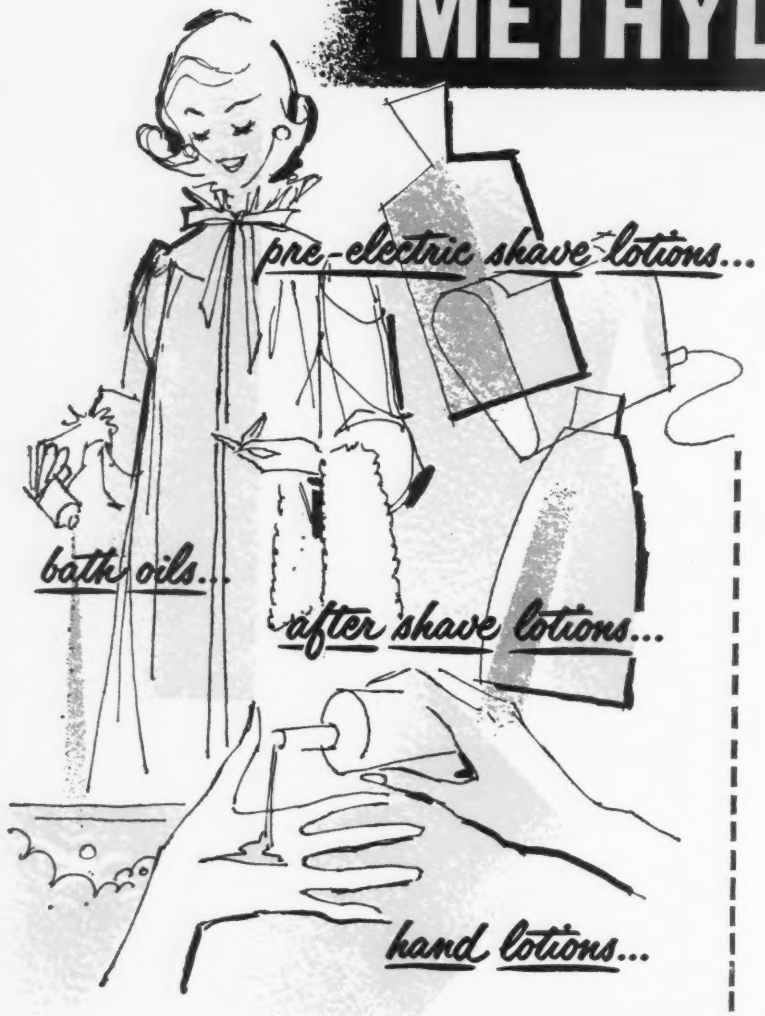
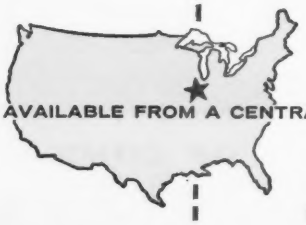


YOU WILL FIND STEPAN METHYL ESTERS WILL DO A SUPERIOR JOB AT A SUBSTANTIAL SAVING

Our laboratory tests indicate that the new Stepan purified grades of methyl myristate, methyl palmitate and mixed C_{16}-C_{18} methyl esters have definite possibilities for use in the cosmetic field. They impart the same, smooth feel to the skin as do isopropyl myristate and isopropyl palmitate yet the corresponding methyl esters are considerably lower in price. An independent laboratory has indicated that they are non-irritating and have no allergenic reaction based on their tests. We will be glad to send you copies of these test results.

Investigate the new Stepan cosmetic grade methyl esters. They may well save you money.



COSMETIC GRADE METHYL ESTERS NOW AVAILABLE FROM A CENTRALLY LOCATED SOURCE

STEPAN CHEMICAL COMPANY NINOL

STEPAN CHEMICAL COMPANY

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ON
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☐ Mixed C_{16}-C_{18} Methyl Ester

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Address .....
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✓ TIBETTOGENE®

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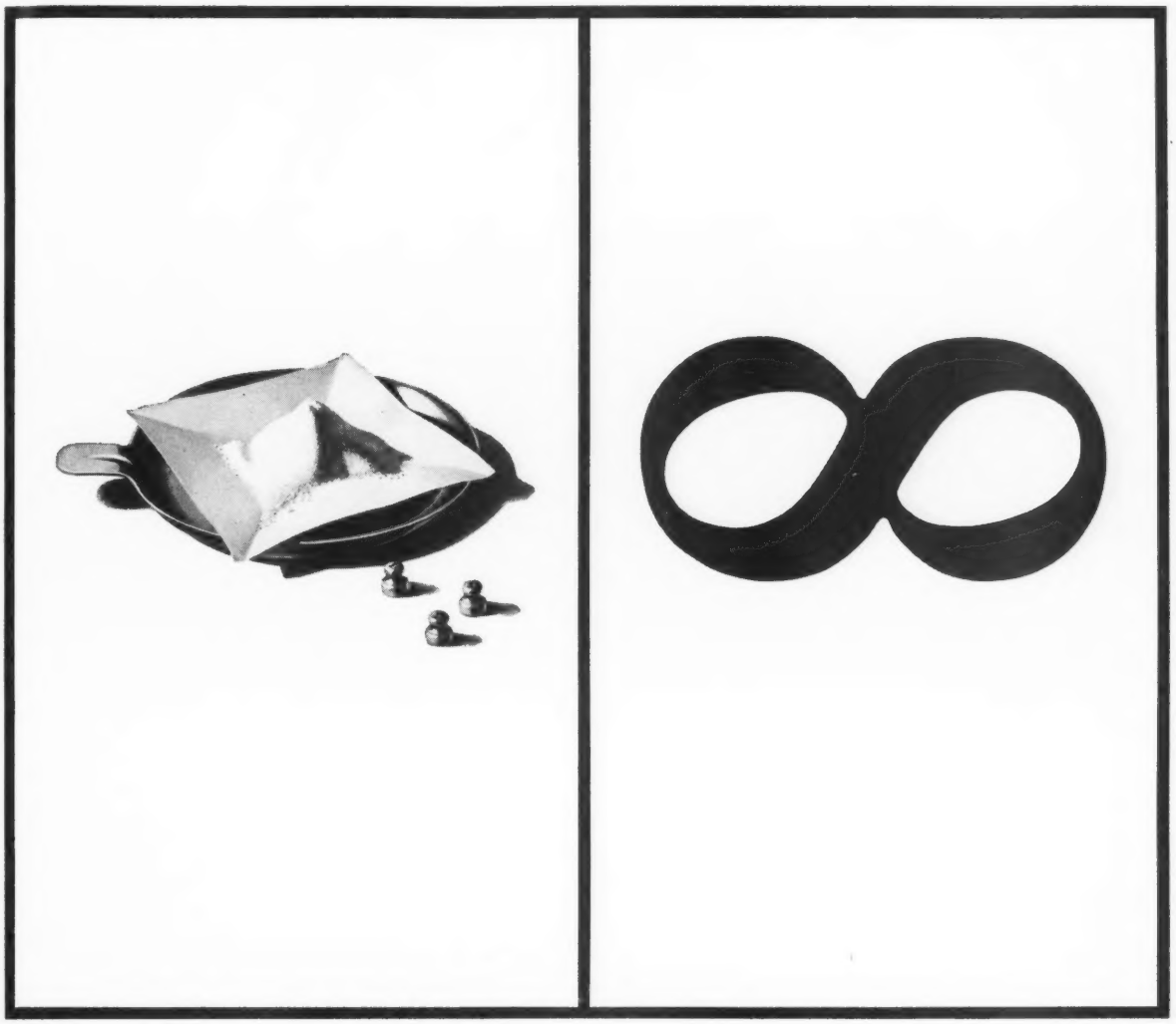
• Synthetic Flower Oils and Aromatic Bases • Essential Oils



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Chemical Sales Division
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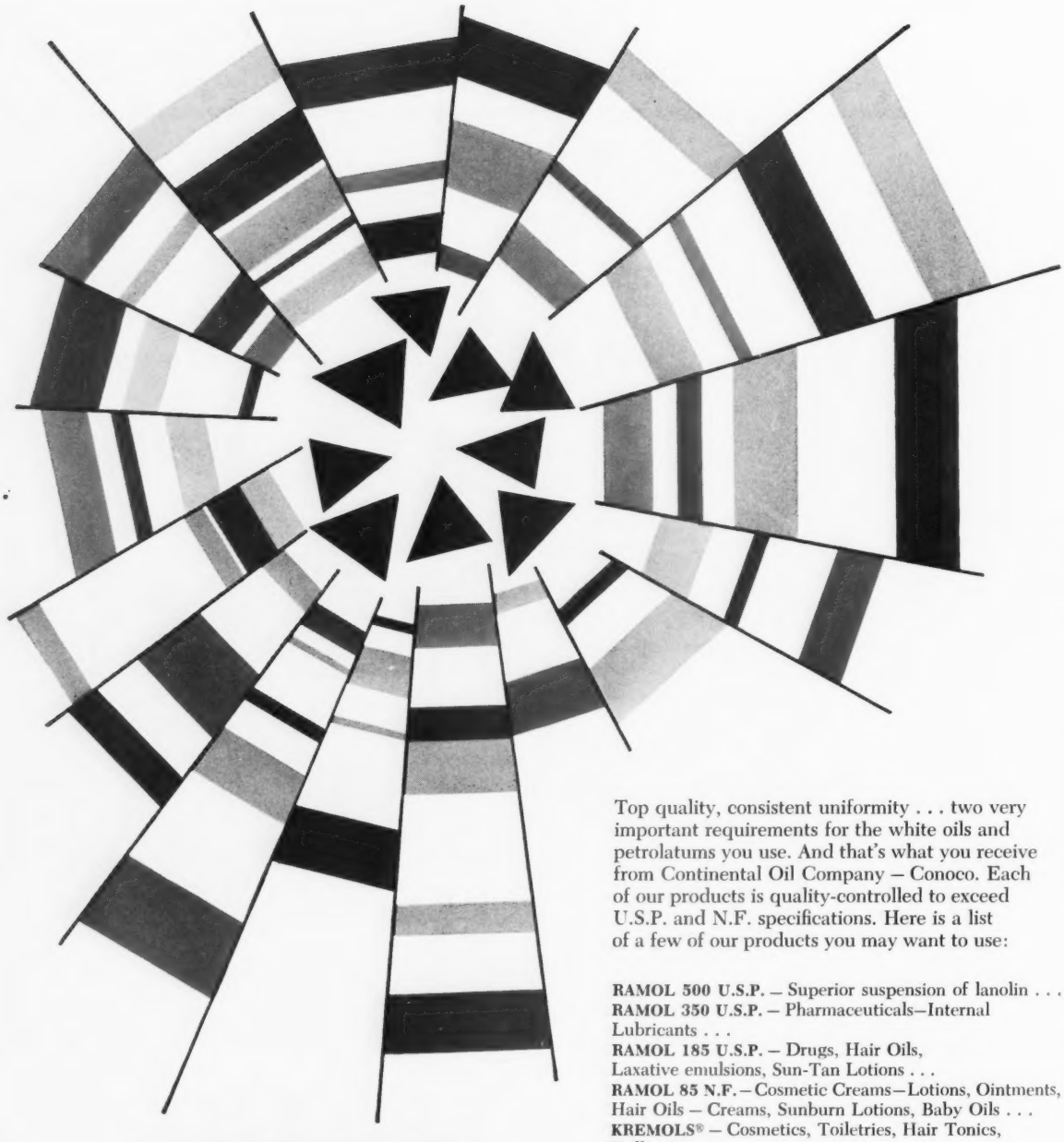

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KREMOLS® – Cosmetics, Toiletries, Hair Tonics, Brilliantine . . .
BRILLOL® – Exceptionally low-viscosity for toiletry preparation.

POSSIBILITIES UNLIMITED . . .

Why not investigate the possibilities offered in Conoco's complete line of white oils and petrolatums. We'll be glad to send you samples.

with the high quality, consistent uniformity of

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CONOCO Petrochemicals

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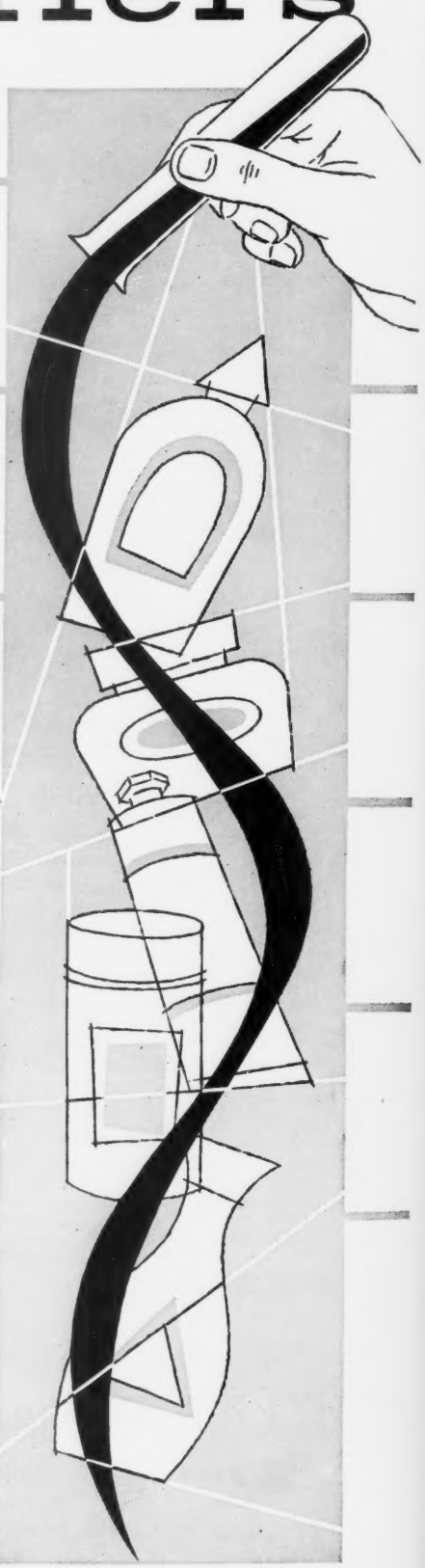
For ease of use — For dependable results —
For solving difficult problems



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Tegin...

Glyceryl Monostearate — Self Emulsifying. For neutral greaseless creams, lotions, ointments, suntan creams.

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• ANTIOXIDANTS PROPYL GALLATE ETHYL GALLATE

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CHEMICAL CORPORATION

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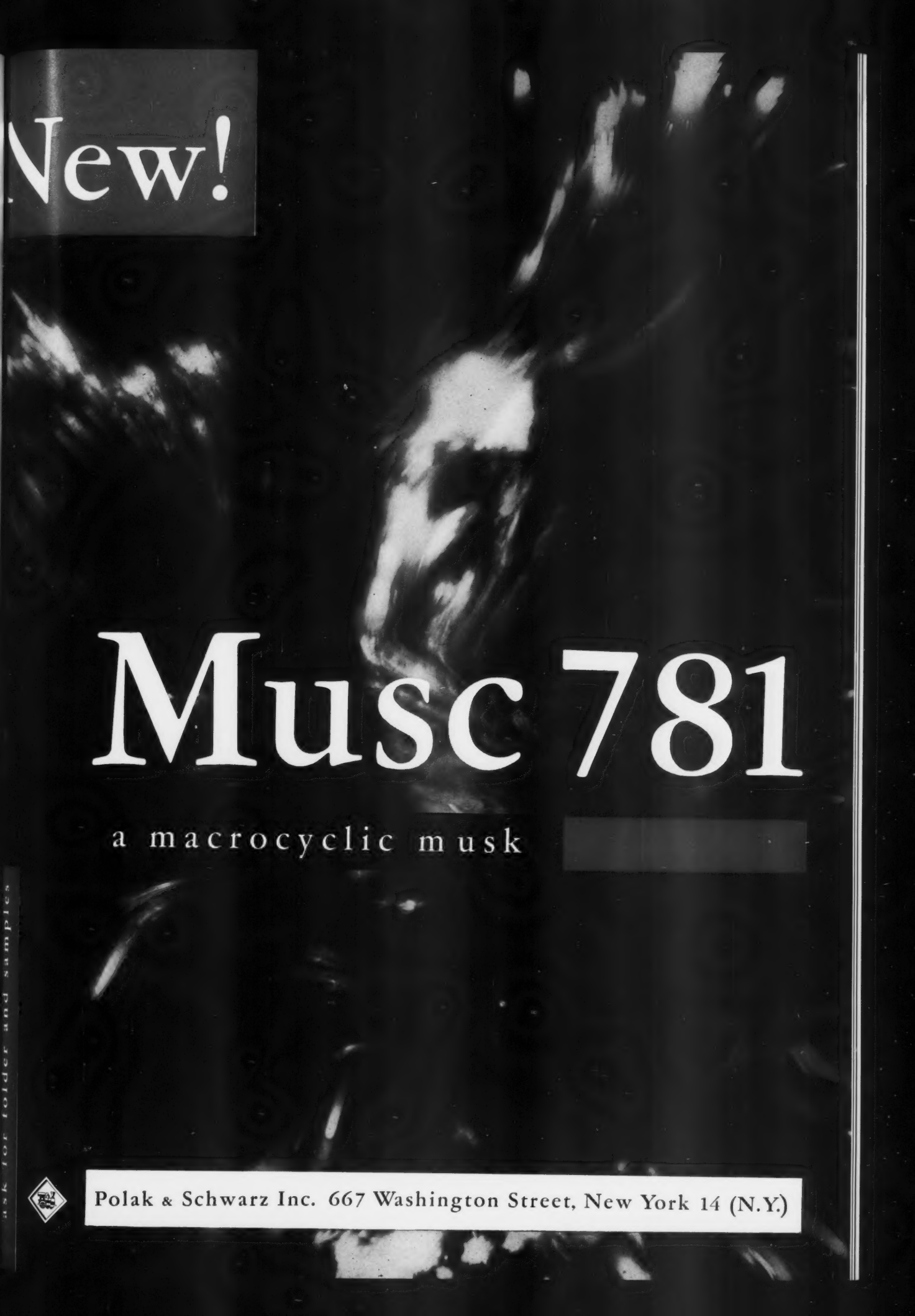
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a macrocyclic musk
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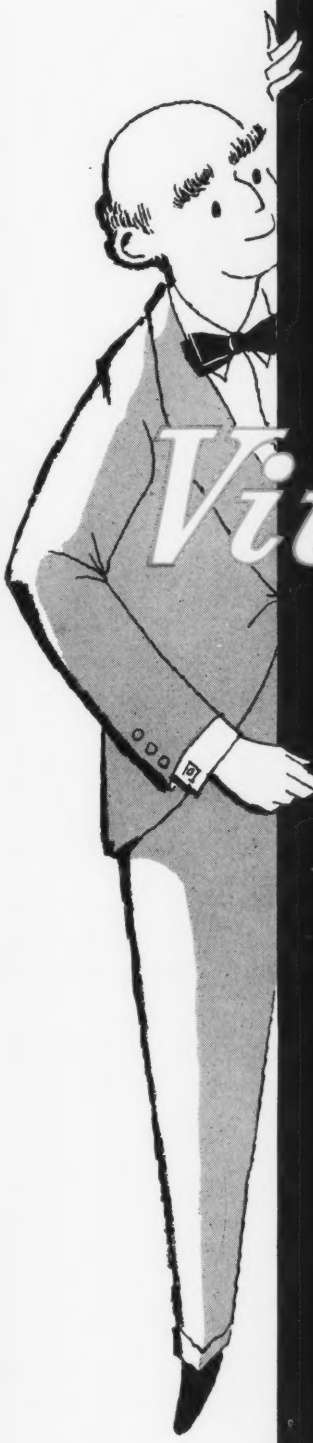

7 Good Reasons to always insist on *Dry Vitamins*

by

NYQ

It's a well-known fact that VITAMINS fight! They argue with each other, and with outsiders (iron, for example).

NYQ can help you stop these fights! How? By using DRY VITAMINS.

1. NYQ offers gelatin coated DRY VITAMINS A, D_2, A & D_2 in all potencies and meshes plus DRY VITAMINS E ACETATE 25%, **DRY CYANOCOBALAMIN** and **DRY COBALAMIN CONCENTRATE.** The entrapment of the various "bad actors" in a gelatin matrix assures uniform dispersion of vitamins in each crystal. They can be easily combined with other dry granulations and will never bunch up. You can be certain each tablet will contain the proper vitamin content in physiologically available form.

2. Low loss from extrusion reduces need for excessive overages.

3. No unpleasant after-taste as in certain oil base products.

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5. Ideal for soluble tablets.

6. Mixes well with all vitamins and minerals without potency loss.

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We can assist in formulation techniques for each of these vitamins.

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You can't fool her eyes . . . but the magic of Verona's research and development chemists has perfected aromatic developers and extenders that can, *and do,* fool her nose.

Clean, fresh, brilliant top notes that rival Nature's own . . . and are helping some of America's leading cosmetics along the road to leadership.

Remember . . . the important point about the point of sale is this — to cosmetics shoppers the fragrance is vitally important. The scent can send *more* sales your way! We will gladly forward samples of the Verona specialties listed at the right. Try them and see for yourself how much more successfully they help you hit, and *hold,* the high notes.

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RESEDALIA, an acetal.
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VERONA CHEMICAL COMPANY Plant and Main Office: 26 Verona Avenue, Newark, N. J. 1210 Rosedale Avenue, Chicago,

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B.F.Goodrich Chemical *raw materials*

New Velvet-Jell silicon-base auto polish is made by Westley Industries, Cleveland, Ohio. B.F.Goodrich Chemical Company supplies Good-rite Carbopol 934 which produces its ideal viscosity.

New auto polish with Carbopol® 934

puts cream into car cleaner market

This new cream-style auto polish uses Good-rite Carbopol 934 to provide car owners with new, easier polishing and fabulously glossy results for both chrome and painted surfaces. It has just the right viscosity to go on smooth as silk.

Here's another example of the ideal combination you get from Carbopol 934 —the viscosity and spreading qualities you want, as well as real ease of stirring and pumping in processing.

Carbopol 934 is highly compatible with materials most frequently used in cosmetic, pharmaceutical and industrial compounds using water base dispersions. It retains its viscosity better under nearly all conditions.

Samples and more information are available. Write to Dept. RB-3, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

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Creative Perfumer

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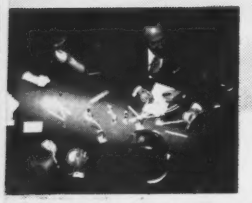
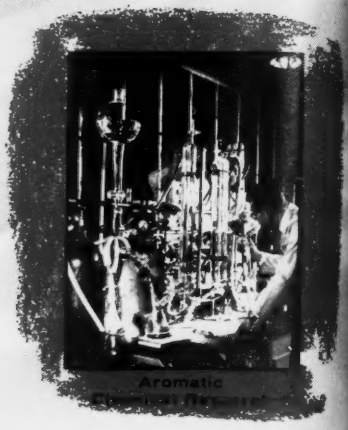
Cosmetic Research



Perfume Evaluation Board



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A successful perfume is a combination of the talents of many people . . . each concentrating his specialized abilities to achieve the right fragrance for your product.

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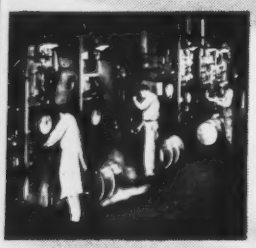
At the VAH Research Center in Union Beach, N. J., several thousand aromatic materials have been synthesized . . . many are already important ingredients in modern perfumes that are setting new style trends.



Aromatic Production

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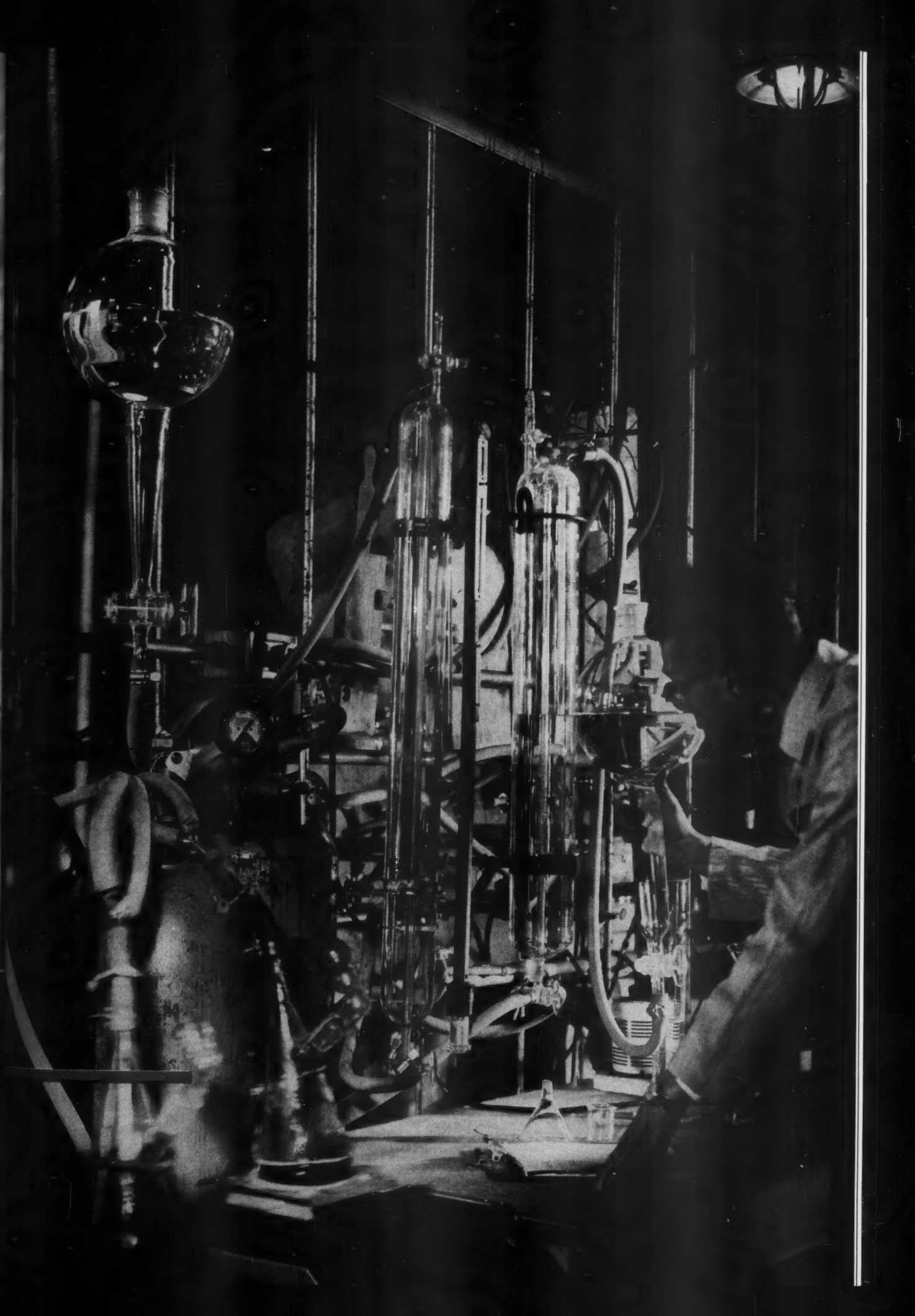
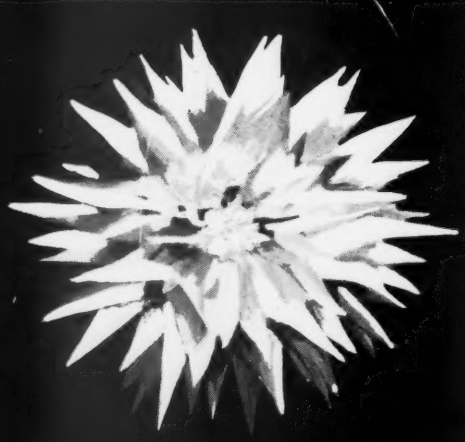
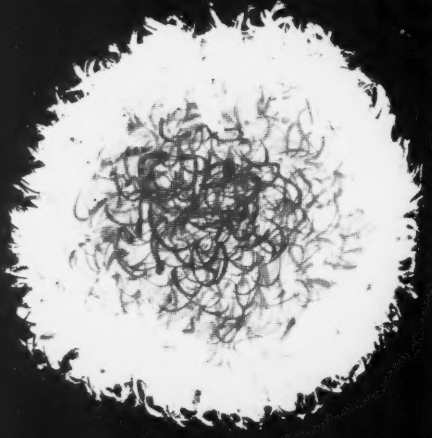
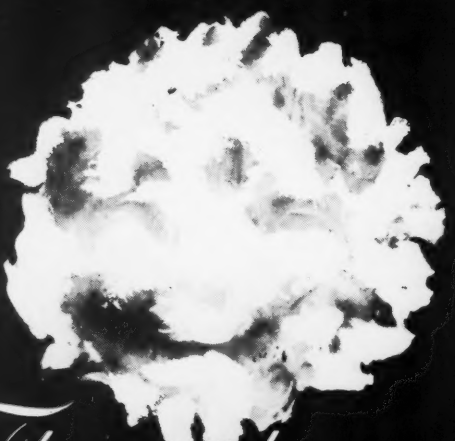




BOUQUET 54 ..... by **Florasynth**



...as *modern* as tomorrow ...as *practical* as today!



Florasynth LABORATORIES, INC.

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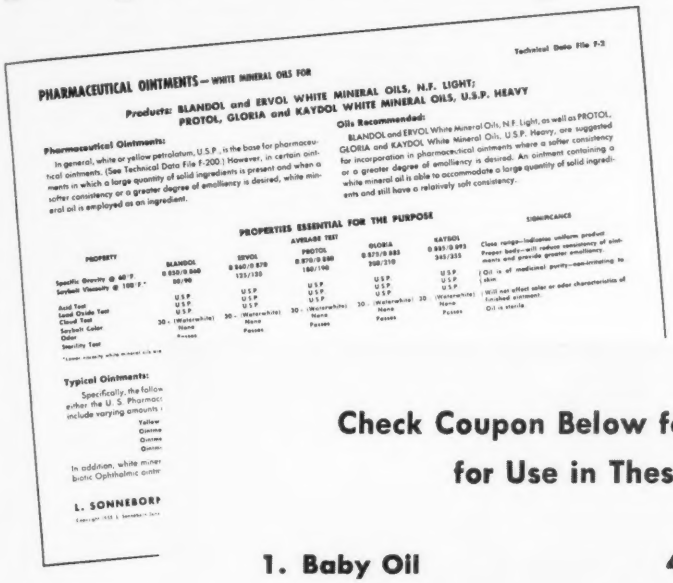
The latest creation of Florasynth for those progressive manufacturers seeking fresh meaning and new loveliness in their perfumes, cosmetics and cosmetic products.

Send today for this useful data on WHITE OILS prepared to fit your specific needs



Technical Data File F-2

PHARMACEUTICAL OINTMENTS—WHITE MINERAL OILS FOR

Products: BLANDOL and ERVOL WHITE MINERAL OILS, N.F. LIGHT; PROTOL, GLORIA and KAYDOL WHITE MINERAL OILS, U.S.P. HEAVY

Pharmaceutical Ointments:

In general, white or yellow petrolatum, U.S.P., is the base for pharmaceutical ointments. (See Technical Data File F-200.) However, in certain ointments in which a large quantity of solid ingredients is present and when a softer consistency or a greater degree of emolliency is desired, white mineral oil is employed as an ingredient.

Oils Recommended:

BLANDOL and ERVOL White Mineral Oils, N.F. Light, as well as PROTOL, GLORIA and KAYDOL White Mineral Oils, U.S.P. Heavy, are suggested for incorporation in pharmaceutical ointments where a softer consistency or a greater degree of emolliency is desired. An ointment containing a white mineral oil is able to accommodate a large quantity of solid ingredients and still have a relatively soft consistency.

PROPERTIES ESSENTIAL FOR THE PURPOSE

PROPERTY	AVERAGE TEST					SIGNIFICANCE
	BLANDOL	ERVOL	PROTOL	GLORIA	KAYDOL	
Specific Gravity @ 60°F	0.850/0.860	0.860/0.870	0.870/0.880	0.875/0.885	0.880/0.893	Close range—indicates uniform product
Saybolt Viscosity @ 100°F.*	80/90	125/135	180/190	200/210	345/355	Proper body—will reduce consistency of ointments and provide greater emolliency
Acid Test	U.S.P.	U.S.P.	U.S.P.	U.S.P.	U.S.P.	Oil is of medicinal purity—non-irritating to skin
Lead Oxide Test	U.S.P.	U.S.P.	U.S.P.	U.S.P.	U.S.P.	
Cloud Test	U.S.P.	U.S.P.	U.S.P.	U.S.P.	U.S.P.	
Saybolt Color	30+ (Waterwhite)	30+ (Waterwhite)	30+ (Waterwhite)	30+ (Waterwhite)	30+ (Waterwhite)	Will not affect color or odor characteristics of finished ointment
Odor	None	None	None	None	None	
Sterility Test	Passes	Passes	Passes	Passes	Passes	Oil is sterile

*Lower viscosity white mineral oils are

Typical Ointments:

Specifically, the follow... either the U. S. Pharmac... include varying amounts ...

Yellow
Gamma
Oxytoxa
Quinin...

In addition, white miner... biotic Ophthalmic ointm...

L. SONNEBORN...

Gives complete information on properties and characteristics of the White Mineral Oil best suited for utilization in each application or process listed below. Also suggested formulations.

Check Coupon Below for Data on WHITE OILS for Use in These Applications

1. **Baby Oil**
2. **Cosmetic Creams**
3. **Hair Preparations***
4. **Intestinal Lubricants**
5. **Pharmaceutical Ointments**
6. **Sterilization of Medical Instruments**

***Including Butch Creams or Hair Stick**

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L. SONNEBORN SONS, INC.
New York 10, N. Y.

Specialists in White Oil and Petrolatums for More than Half a Century

White Oil, Petrolatum & Sulfonate Div., Dept. D68
L. SONNEBORN SONS, INC.,
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Please send me the Technical Data indicated below (circle number corresponding to application in list above).

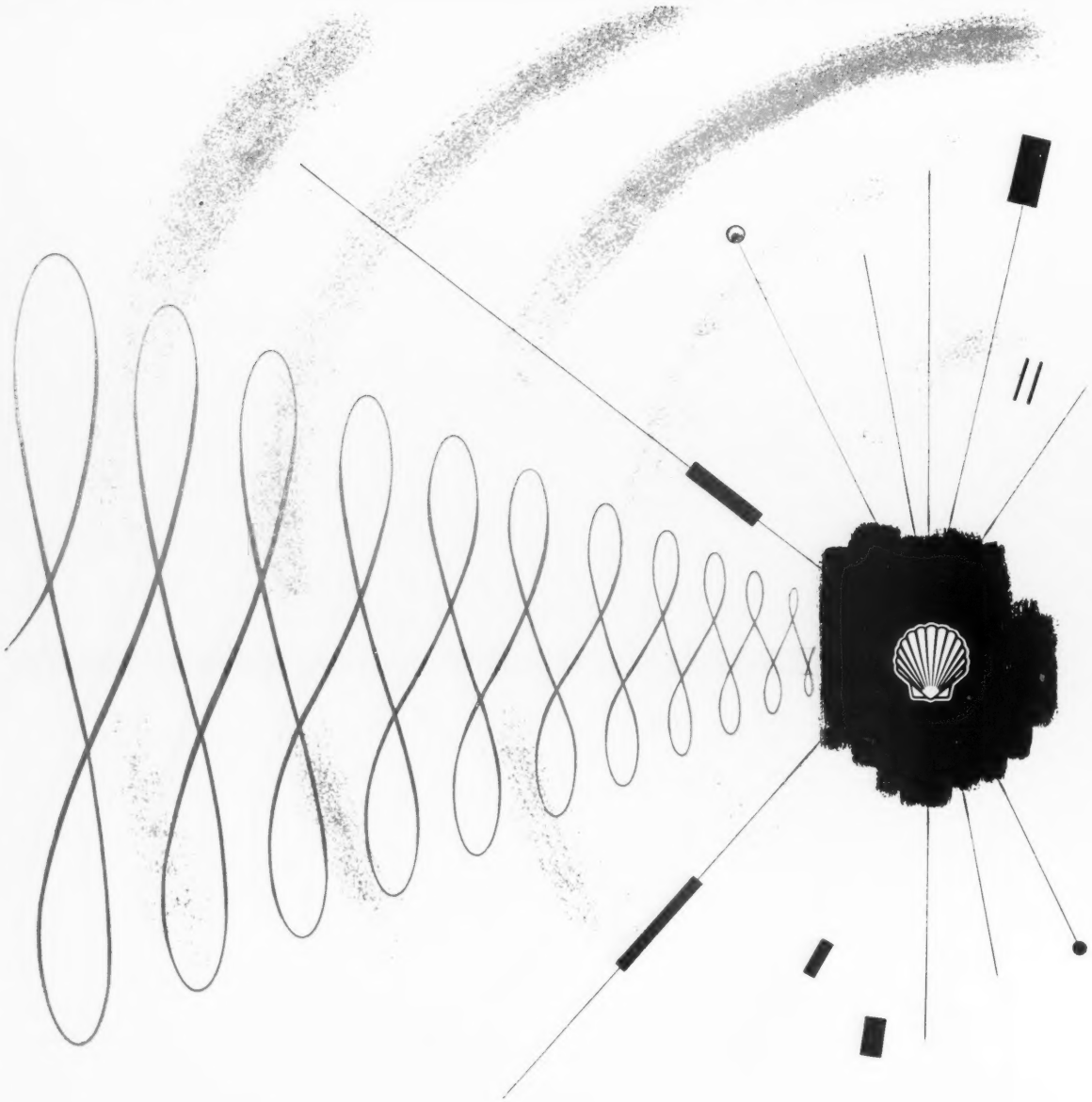
1 2 3 4 5 6

Name..... Title.....

Company.....

Address.....

City..... Zone..... State.....



Specify **glycerine** with confidence

Conveniently located storage facilities
assure prompt delivery,
from a drum to a tank car

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SHELL

From Heyden Newport

N.F. (F.F.C.)
As an odorant in soaps, hand lotions and other cosmetics and as an additive in flavoring compounds.
TECHNICAL
Useful for the synthesis of pharmaceuticals and organic chemicals.

PREFERRED SOURCE FOR HIGHEST PURITY AND UNIFORMITY

BENZALDEHYDE

When you process with Heyden Newport Benzaldehyde, you are assured of unsurpassed purity and uniformity in the characteristics you seek—chemical reactivity, volatility, odor and taste.

That's why leading cosmetic, aromatic and pharmaceutical producers rely on Heyden Newport as their basic source for this valuable intermediate.

For new product development, as well as for those now in commercial use, it will pay you to investigate the processing benefits of Benzaldehyde and its chlorinated derivatives, such as o-Chlorobenzaldehyde and p-Chlorobenzaldehyde.

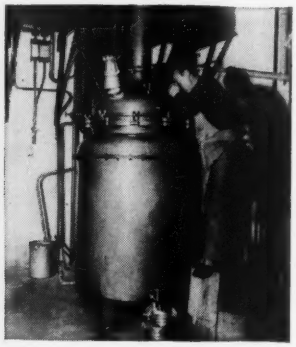
Heyden Newport Benzaldehyde N.F. (F.F.C.) or Technical is shipped in 450 lb. stainless steel drums, 100 lb. glass carboys, and 40 lb. lined drums. Samples and technical data are available upon request.

Heyden Newport Chemical Corporation, 342 Madison Ave., New York 17, New York.

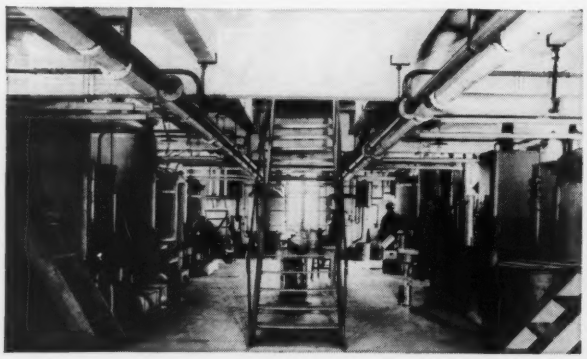
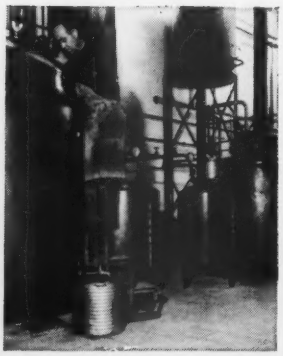
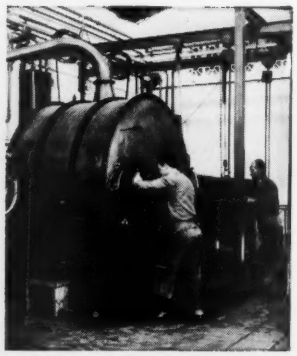
HEYDEN NEWPORT

Where tradition meets tomorrow in chemical progress

CAPACITY



QUALITY

for the finest in floral and essential oils

BERTRAND FRÈRES, INC.

443 FOURTH AVE. NEW YORK 16, N.Y.

STOP

AT THE FIRST SIGN OF YELLOW

Look to 2-Amino-2-Methyl-1, 3-Propanediol

White stays white! AMPD soaps are superior in stability of color and in freedom from yellowing or darkening – even after prolonged storage. Neutral soaps of this aminohydroxy compound possess unusually high emulsifying power and have no odor that will interfere with perfuming the final product. Creams made with this compound are remarkably free from oil "leakage". Consistency and texture of creams and lotions remain constant even after long periods.

For cosmetic creams and lotions, brushless shaving creams, hand lotions and mineral oil emulsions, put this superior emulsifying agent in your formula. Write today for samples and technical data sheet. We will be glad to give our recommendations on your particular emulsion problem.

PROPERTIES OF AMPD
(PURE MATERIAL)

Formula	$CH_2OHC(CH_3)NH_2CH_2OH$
Molecular Weight	105.14
Melting Point, °C	109 to 111
Boiling Point, °C	151 to 152 at 10mm
pH of 0.1M Aqueous Solution at 20°C	10.8
Solubility in Water g/100 ml at 20°C	250

DISCOVER THE NITROPARAFFINS!

INDUSTRIAL CHEMICALS DEPARTMENT

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Please ask for

data sheets and samples

ISO-BERGAMATE "DRAGOCO"

resembles the fragrance of the bergamot oil, along with a soft fruitiness and a delicate, woody background.

DRAGO-JASIMIA

to accentuate fine flower scents – particularly for jasmin – proven essential in deluxe perfumery

LACTOSCATONE "DRAGOCO"

provides a typical fecal note with a warm animal background and a delicate woody note.

DRAGOCO INC.

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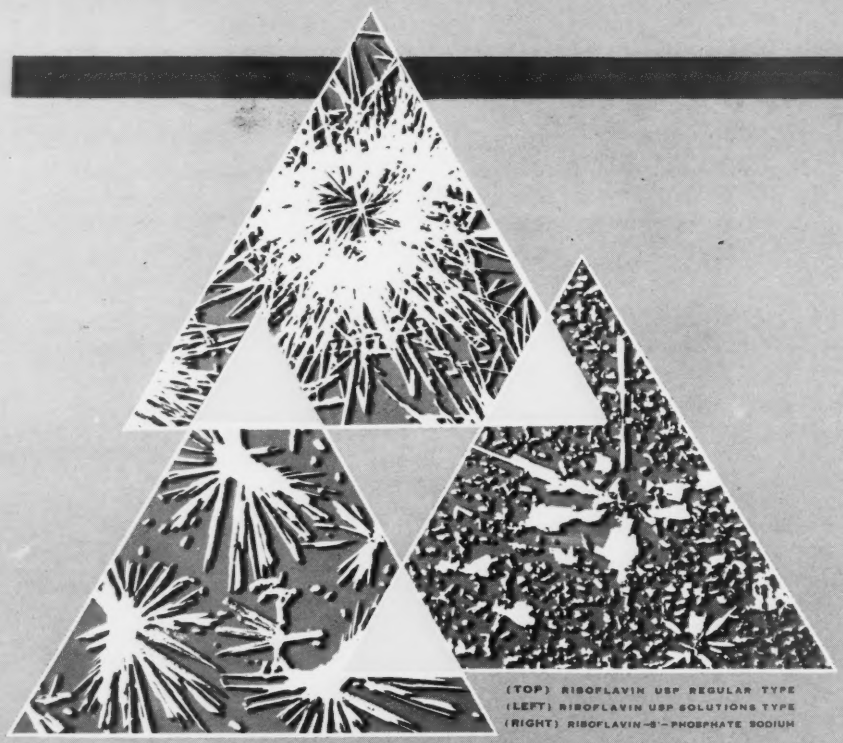

(TOP) RIBOFLAVIN USP REGULAR TYPE
(LEFT) RIBOFLAVIN USP SOLUTIONS TYPE
(RIGHT) RIBOFLAVIN-5'-PHOSPHATE SODIUM

VITAMIN B_2 COMES RIGHT FROM ROCHE

Various types are available to meet the most exacting demands in the pharmaceutical field for tablets, capsules, dietary supplements, liquid preparations; and in the food industry for enrichment premixes and breakfast cereals. Roche has the type of riboflavin that is right for you, whenever you want it—"by the tons."

Roche originated riboflavin-5'-phosphate sodium for all solutions demanding rapid, high solubility, and stability. Among pharmaceutical manufacturers it is preferred for injectable solutions, elixirs, and multivitamin drops. A better, less bitter taste than U.S.P. riboflavin makes it advantageous for chewable tablets and other products likely to be held in the mouth. In the food field it is preferred for breakfast cereals.

The Roche synthesis achieves quality standards that meet, or even exceed the rigid U.S.P. riboflavin requirements. This assurance is insurance for you.

Trust Roche resources for a constant, unlimited supply of riboflavin. Trust Roche for quick, sure service.

ORDER *right* . . . ORDER *from Roche*

VITAMIN DIVISION
HOFFMANN-LA ROCHE INC.

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(Illustration represents actual crystals under high magnification, using shadow technique.)

"Five grains please."

Keeping Posted

Salk Vaccine Indictments

A Federal grand jury at Trenton, N. J., indicted five manufacturers of Salk polio vaccine for fixing prices and monopolizing the manufacture of this product for the period of time "from early in 1955 to December 31, 1957." Involved in the charges was more than $53,600,000 worth of the vaccine sold to Federal, state and local governments during the period of time mentioned. The five manufacturers included in the indictment are: Allied Laboratories, through its Pitman-Moore Division; American Home Products Corporation, through its subsidiary, Wyeth Laboratories; Eli Lilly and Company; Merck & Co., through its Merck Sharp & Dohme Division; and Parke, Davis & Company. The only one of these companies resident in New Jersey is Merck & Co., and Trenton is a favorite spot for the government to bring these suits.

The indictment charges that the five manufacturers, during the time period mentioned, "violated the law by engaging in an unlawful combination and conspiracy in restraint of trade and commerce among the several states in sales of Salk vaccine to public authorities." The jury said the illegal offenses were accomplished by a continuous agreement among defendants to 1) Submit uniform price quotations for vaccine sales to public authorities; 2) Adopt uniform and noncompetitive terms and conditions for such sales; 3) Adopt uniform and noncompetitive methods for the pricing of vaccine. The jury charged that the defendants arbitrarily set prices at "uniform, artificial and noncompetitive levels." All other pharmaceutical concerns, it declared, were denied an opportunity to compete in the sales of the vaccine to public authorities."

Eugene N. Beesley, president of Eli Lilly and Company, issued a blast condemning the government action. Reproduced as an advertisement in many newspapers throughout the country, the message read:

"We are extremely shocked at this charge of alleged price conspiracy in sales of polio vaccine to governmental agencies. So far as we are concerned it is completely nonsense. It would be a strange conspiracy, indeed, that had as its purpose constant decreases in prices—never an increase. We have voluntarily reduced the price of our vaccine five different times since we first made it available. The price of Lilly vaccine today is only a little over one-half of what it was at the beginning. These price reductions began a long time before the Justice Department initiated its investigation, and was a result of our productive achievement—not of legal harassment.

"We have given the government a discount of 52½ per cent from our list price on all vaccine paid for by government agencies. Lilly's average profit on all the polio vaccine we have sold to date has been only 6¼ cents per dose.

"Eli Lilly and Company produced well over one-half of the vaccine made in the United States to fight the great battle against the crippling disease poliomyelitis. In just two years paralytic polio in this country has been reduced by more than 80 per cent. Production of public vaccine was by all odds the most difficult biological production program ever undertaken by Eli Lilly and Company. Never in the commany's history have a few pennies of profit-per-dose required such complex manufacturing procedures and such serious risks to the company and its employees.

"The investment and risks were enormous. The demands of the project were such that other programs of research, development, and production had to be deferred. It was only because of our large-scale experimental work in live tissue culture—launched long before its application to polio vaccine was foreseeable—that Lilly was able to assume leadership in the exacting task of producing and testing this vaccine. Like many other good American citizens, we have consistently placed the public interest above our own as we sought to make available at the earliest possible moment millions of doses of safe and effective vaccine.

"According to a report published by the U. S. Public

Your beauty preparations will offer

Cleanliness That Clings

with G-11®

(Hexachlorophene USP)

Cleanliness that clings—the continuous hour-after-hour degerming action of G-11—is the secret of success behind many leading soaps, creams, lotions and other beauty products.

G-11 provides protection against bacteria *between washings.* It leaves a microscopic anti-bacterial deposit that does not rinse off but stays on to stop the growth of trouble-making germs deep in the skin. It is easy to incorporate into your formula.

For users of your products, G-11 means fresher, cleaner skin, better protection against skin blemishes, and effective deodorizing action. May we tell you more about the sales- and profit-making benefits of G-11?

SINDAR® Corporation
Industrial Aromatics and Chemicals

321 West 44th Street • New York 36, N. Y.

Health Service there was a total inventory of 26,423,000 doses of vaccine available as of May 2. Of this total, Lilly vaccine amounted to 24,043,000 doses. One of the problems we now face is the potential loss of much of this 24,000,000 doses of vaccine which we have on hand. (If it loses potency before it is used, the vaccine must be destroyed.) This tremendous amount was produced in anticipation of its need for vaccinating millions of Americans who had not yet been protected against polio at the start of the year. The demand has not materialized.

"It is incredible that as a postscript to one of our greatest achievements, we should now have to face this fantastic suit."

John T. Connor, president of Merck & Co., explained that following the "urgent request" of the Polio Foundation, they "plunged into the risky and difficult problem of making a safe and effective vaccine," and that it took them "two and a half years of intensive and very costly research, development and production effort" before they had a marketable product 13 months after their competitors had been marketing the vaccine.

"When we produced our first vaccine for sale in May 1956," said Mr. Connor, "we had to decide what price we would charge. We could have charged more than the market price but, at a time of acute national shortage, this would have been considered profiteering. We could not charge less than the market price in view of our heavy costs. We chose the only reasonable alternative. We charged the market price. As soon as we began to move out of the red, which took us another year, we cut the price of our vaccine."

Kenneth F. Valentine, president of Pitman-Moore Company, denied any conspiracy saying that "the only cooperation we know of between manufacturers was with respect to testing and perfecting the product at the specific request of an agency of the United States Government."

"Earnings from polio vaccine have not been excessive," said Mr. Valentine, "and even today Pitman-Moore is still taking financial risks which are inherent to the production of the vaccine. This has been the most difficult biological product we have ever seen."

"This charge is a poor reward for the courage of management and stockholders of a private business in risking the company's capital in order to participate in a government sponsored program to produce an effective preventive for this tragic disease."

Parke, Davis & Company made the following simple statement: "We never have conspired with other manufacturers to fix or control the price or the market for this (polio vaccine) or any other pharmaceutical product."

H. W. Blades, president of Wyeth Laboratories, denied the charges, pointed out risks involved, and concluded:

"The conquest of paralytic poliomyelitis has been achieved by a cooperative effort unique in the history of American medicine. The government's action is bound to discourage and make more difficult such cooperation in the future."

Spector Sells Hazel Bishop, Inc.

Raymond Spector, president of Hazel Bishop, Inc., has sold all his common and preferred stock in the corporation to C & C Television Corporation. The stock sold by Mr. Spector will, upon conversion of the preferred shares, represent 836,000 shares, or more than 60 per cent of the common, was transferred at approximately $4.50 per common share, or a total of approximately $3,762,000. This would give a value of the corporation of approximately $6,270,000. For the year ending October 31, 1957, the company had a loss of $996,048, on sales of $10,006,462. Mr. Spector will remain as president and chief executive officer of Hazel Bishop under a five year contract.

In explaining the basis of the purchase, Matthew M. Fox, president of C & C TV, said:

Raymond Spector has built a great brand name in the cosmetic field for Hazel Bishop. We in C & C TV have built a vast bank of TV time across the nation which will be used to promote the sale of Hazel Bishop products. Advertising is the life blood of any effective marketing operation. We intend to add new strength to the Hazel Bishop organization, enabling it to gain a growing share of the cosmetic market. It is common knowledge that the earnings of Hazel Bishop have been adversely affected up to now by its inability to achieve a healthy advertising expenditure ratio, despite its wide acceptance by the consuming public. We believe by combining forces we will correct that deficiency and provide for substantial growth.

Arthritis and Hair Stipulations

Stipulation agreements have been entered into with the Federal Trade Commission under which the following companies have agreed to discontinue claims that their respective products 1) are an effective treatment for, or will give complete relief of, any kind of rheumatism, 2) have any therapeutic effect on the symptoms of these conditions, 3) have any beneficial effect beyond temporarily relieving minor aches or pains of the disorders, or 4) penetrate below the skin or have a beneficial effect on body structures underlying the area of application. However, they may claim that the products temporarily relieve minor aches and pains arising in these underlying structures: Plough & Co. (T-Tone Rub); The Chattanooga Medicine Co. (Soltice); A. W. Curtis Laboratories (Curtis Rubbing Oil); Standard Laboratories (Sloan's Liniment); The Denver Chemical Manufacturing Co. (Dencorub).

Plough, Chattanooga, Curtis, and Standard also agree not to represent that their products give a new, different, or more extensive type of relief than competing products; while Plough, Chattanooga, Curtis, and Denver agree to stop claims that their products relieve pain for any period of time not in accordance with the facts.

In addition, Curtis must not represent that its Curtis Hair Treatment products (Curtis Scalp Oil, Shampoo, or Hair Oil), used separately or in combination, 1) will enable the user to retain hair, 2) will prevent hair loss, 3) will restore hair, cause it to grow or

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stimulate its growth, or 4) will cure dandruff.
Also, Standard may no longer claim that Sloan's Liniment feeds or nourishes the tissues or carries away poisons; while Denver is stopped from representations that Dencorun 1) is an effective treatment for, or will give complete relief of, any kind of skeletal muscular aches or pains, or has any beneficial effect in excess of temporarily relieving minor aches or pains of these conditions, or 2) relieve or reduces congestion, swelling or pressure.

Texas Pharmacal Defends Marks

On May 19, 1955, Texas Pharmacal Company of San Antonio, Texas, owner and holder of the "Allercreme" trademark registration for cosmetic preparations (#407,387, dated May 30, 1944) filed a petition against Aloe-Creme Laboratories, of Fort Lauderdale, Florida, for cancellation of its registration of "Alo-Creme" (#590,472, dated June 1, 1954) for ointment for sunburn, burns and skin injuries. The grounds were that although the "Alo-Creme" mark was registered for ointment for sunburn, burns and skin injuries, the goods actually sold by Aloe-Creme under its trademark, were identical to the class of goods sold by Texas Pharmacal Company under its mark, and since the marks were substantially the same in appearance and sound, confusion was most likely to arise.
During prosecution of the proceeding, Aloe-Creme Laboratories sought registration of the mark "Alo-Creme After Tan" for a lotion for skin grooming. Texas Pharmacal Company opposed this because of its prior registration of "Saf-Tan" for a protective cream to prevent sunburn and the associated use thereof with its mark "Allercreme," and the likelihood that applicant's mark "Alo-Creme After Tan" would be confused with Texas Pharmacal Company's "Allercreme Saf-Tan."
The two proceedings in the United States Patent Office (Cancellation #6509 and Opposition #36224) were consolidated and final hearing held February 21, 1958. The decision of the Examiner of Interferences, as contained in written opinion issued April 15, 1958, sustained the position of Texas Pharmacal Company in both respects, that is, (1) the petition to cancel the registration "Alo-Creme" was granted and (2) the registration of the mark "Alo-Creme After Tan" was refused. The decision is open for appeal by Aloe-Creme Laboratories for sixty days from April 15, 1958.

Welch Award Essays

The 1958 Charles S. Welch Memorial Awards of the Toilet Goods Association were presented to students of the New York University Graduate School of Business Administration on May 22, at a luncheon at the Starlight Roof of the Waldorf-Astoria Hotel, New York. The subject of this year's essay contest was The Attitude of College Men Towards the Use and Purchase of Certain Toiletries Designed for Men. It covered such products as deodorants, men's colognes, after-shave and pre-shave preparations.
The first prize essay was written by M. K. Hansen under the title of Four Male Cosmetics and Male G.B.A. Students. The second prize essay, written by James W. Taylor, was titled A Study of Purchases and Attitudes Toward Men's Toiletries. The third prize essay, by Marion Ann Klein, was titled Attitudes of Male Graduate Students Toward Men's Toiletries. Three essays received Honorable Mention. These are: The Use of Men's Cosmetics, by Edward K. Gill; A Toilet Goods Survey, by J. R. McGovern; and Survey of Men's Toiletries, by B. J. Loret.
The awards were presented by Charles H. Oestreich, president of The Lander Company, New York, and chairman of the Charles S. Welch Memorial Awards Committee for 1958. The six essays have been published in a 24-page booklet by the Toilet Goods Association and distributed to members.

Merck & Co. Facts

The Merck Sharp & Dohme Division of Merck & Co. has roughly 600 products in its ethical line at the present time. In the last two years about 200 products have been eliminated because of obsolescence.
The Merck Chemical Division has dropped "a couple of hundred items" but has also added about the same number. The total extent of the line remains nearly the same, but the profit and growth prospects are far beyond that of a few years ago.
Durill, discovered by Merck after ten years of research, represents only one facet of the company's overall research program in hypertensive and cardiovascular fields. The company is searching for better steroid hormones than are available. Also fundamental research is being conducted to gain better understanding of allergic diseases, such as rheumatoid arthritis, and possibly better treatments for them. Other active research areas include mental health and cancer. The company is participating in the cancer program of the federal government under a $775,000 contract.

Arizona Upholds Fair Trade

The Arizona Supreme Court on May 12 held the fair trade act of that state constitutional and binding on both signers and non-signers of fair trade contracts. This decision reversed a lower court decision against General Electric in its suit against Telco Supply, Inc. The decision held the fair trade act to be a proper excercise of the police power of the state. It held that fair trade cannot possibly be construed as stifling or prohibiting competition or creating a monopoly. The decision stated that the fair trade act was clearly designed to protect the trademark or brand name of the producer and was in no sense a price-fixing act.

Major Expansion for Upjohn

The Upjohn Company is embarking on a major expansion of its physical facilities in the next two or three years to meet growing demand. Ten projects are under way or will be started shortly, with the major feature being the construction of a modern new office building on a 35-acre site across from the company's Portage Road plant at Portage and Bishop Roads. In addition to the office building, other projects are:

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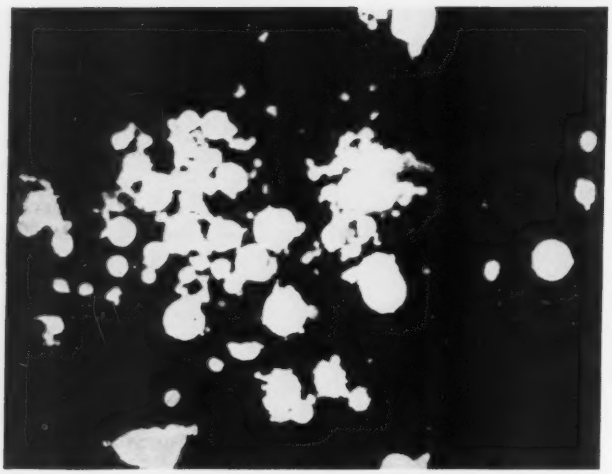

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J. T. Baker Chemical Co.

Phillipsburg, New Jersey

1) Expansion of fermentation and extraction plant for production of antibiotics and steroids; 2) Construction of a new chemical building for steroid synthesis; 3) Construction of a new fermentation pilot plant building; 4) A continuing branch office expansion program with efficient, modern new facilities planned for San Francisco in 1959; 5) A conference hall at Brook Lodge to heighten its value as a meeting place for Upjohn salesmen and visting groups of medical scientists; 6) Remodeling of the basement area in the Portage Plant for the installation of modern, high-speed computer equipment; 7) Expansion of the Canadian manufacturing building; 8) Construction of a new office and manufacturing building in Mexico City; 9) Construction of a new office and manufacturing building in Australia.

Construction of the new office building is considered basic to continued expansion and will provide vitally needed room for administrative and general office staffs. The present administration building on Henrietta Street will, in turn, provide more adequate quarters for the rapidly expanding research and clinical investigation staffs concerned with the discovery and testing of new therapeutic agents.

The new office building will be two stories high, with a total floor area of 286,000 square feet. The lower floor will be used for entrances, services, mechanical equipment, employees lounge, recreation area, and cafeteria; and the upper floor will house the general office functions. A tunnel under Portage Road is planned to connect with the manufacturing plant. The building is designed to permit expansion.

Soap Sales Off

Sales of soaps and detergents for the first quarter of this year reported by 67 manufacturers representing a substantial portion of the industry, were down 6.4 per cent in tonnage, and 2.3 per cent in dollar value compared with the first quarter of 1957. However, the first quarter of 1957 was the highest first quarter in six years. Sales for the first quarter of this year were up from the last quarter of 1957 by one per cent in tonnage, and two per cent in dollar volume. Dollar sales of soaps were down 0.8 per cent, while detergents were up 3.3 per cent. Synthetic detergents continued to increase compared to soaps, and are now 72.2 per cent of the combined tonnage, and 70.2 per cent in dollars.

New HEW Secretary Coming

Arthur S. Flemming, 53-year-old educator and expert in government management, will take over as Secretary of Health, Education and Welfare sometime this Summer, succeeding Marion B. Folsom who has resigned for reasons of health. Mr. Flemming was named by President Roosevelt as a Republican member of the Civil Service Commission where he served for nine years, leaving in 1948 to become the first lay president of Ohio Wesleyan University. He was called back to Washington by President Truman to serve during the Korean War in the Office of Defense Mobilization. President Eisenhower, before his inauguration, named Mr. Flemming, Milton Eisenhower, and Nelson Rockefeller to a committee on government reorganization and personnel, which committee continues in being. In 1953, Mr. Flemming was named head of ODM where he remained until 1957, before returning to Ohio Wesleyan.

Expanding Future for Avon

Reporting to stockholders increased sales for the first four months of this year of 13 per cent, John E. Ewald, president of Avon Products said on May 19, that the upward trend was continuing through May. Avon sales are made only through the company's 100,000 representatives, making Avon one of the largest direct selling organizations in the world.

Mr. Ewald said the company intends to expand its markets and obtain better coverage of present markets. "In the United States," he said, "there is still a great untapped potential."

The company looks for continuously increased sales and profits in Canada where the company has been selling for 44 years, he said, continuing "Outside of the U. S. and Canada, we also have a great potential market. In recent years we have gone into Puerto Rico, Cuba, and Venezuela, and more recently, into Mexico. Results in these countries have convinced us that there is a market for our products in other countries. We plan within the next two years to commence selling in Brazil, Great Britain, and Germany."

Pharmaceutical Problems

"Pharmaceutical research is a chancey business," Warner Lambert president, Alfred E. Driscoll told the Rutgers University Business Conference last month. "Scientific discoveries are hard enough to make, and even the ones of clear-cut therapeutic importance do not necessarily pay off . . . We regard our development of Releasin, a compound which can often halt premature delivery of an infant, to be a major event in endocrinology. But, up to now, it has not added substantially to Warner-Lambert's sales or earnings. Many another pharmaceutical company can match the Releasin story. For every such compound or combination of compounds, which constitute valuable additions to the physician's armamentarium, there must be equally useful drugs that can be sold at reasonable profit . . .

"The greatest problems that the pharmaceutical industry faces are the problems nurtured by our past successes. In years gone by, when medicines were on the whole ineffective and innocuous, nobody paid very much attention to the industry . . . In view of what happened during the testing and introduction of the polio vaccine, can you imagine the public attention that would be riveted on the industry if there were suddenly a major break-through in life-saving drugs for heart disease or cancer? To the extent that we of the pharmaceutical industry make deeper inroads into such scourges as cancer, or such variants of cancer as leukemia and Hodgkin's disease, or heart disease, or arthritis, or even such less publicized ones as Parkinson's disease—which loom all the larger now that so many more common ailments have succumbed to our onslaughts and our span of life is being lengthened; to the extent that we delve deeper into

the body's fundamental chemistry, learning thereby to modify or even reverse the degenerative processes —just to this extent or proportion will public and official scrutiny of our industry increase. This, in turn, in all probability, will be manifested in increased legislative interest, more frequent official investigations, and numerous attempts—often well-intentioned—to cut open the goose that has been laying the golden eggs."

Givaudanian Celebrates 25 Years

The Givaudanian, monthly publication of Givaudan-Delawanna, Inc., noted its twenty-five anniversary last month. First published in May, 1933, color was added in 1945, and in 1958 it became a twelve-page book full of interesting material reporting "the advancement not only of one company but of all fragrance using fields and those associated with them." The Givaudanian says: "We look forward to the future years of publication, during which it shall remain our purpose to serve the best interests of the perfume, soap, cosmetic, and related industries, and in this manner give renewed meaning to our slogan of 1949—'*The Fourth Dimension of Beauty is Fragrance*'."

Rexall Picture

Rexall Drug Company expects both sales and earnings to increase this year, Justin Dart, president, told the New York Society of Security Analysts last month. Mr. Dart said he "not disagree" with trade reports that approximately 50 per cent of the company's business comes from proprietary drugs, 15 per cent from ethical drugs, 15 per cent from the manufacturing division, and 20 per cent from retail operations, with the division of profits approximately the same. The proprietary division, which includes V.C.A. Laboratories, also distributes Rexall products to about 10,000 Rexall agents. V.C.A. laboratories is operating" in the black, but that's about all I can say for it," stated Mr. Dart. The retail division operates the Owl and Liggett retail drug chains on the West and East Coasts.

The company will spend about $1 million for research in its Riker Laboratories Ethical Drug division this year, and is expanding its manufacturing operations, according to Mr. Dart.

"After you have looked over the types of business in which we are expanding," Mr. Dart told the analysts, "we should like to invite you and your companies to bring to our attention any possible acquisitions that you believe would be of interest."

Arthritis Claims Banned

Consent orders concerning claims for arthritis and rheumatism were approved by the Federal Trade Commission. Products involved were Omega Oil, of the Omega Chemical Company; Mentholatum Deep Heat Rub, of The Mentholatum Company; Infra Rub and Heet, of American Home Products Corporation. All three concerns were charged with false newspaper and radio advertising. Mentholatum and American Home were also charged false television advertising. Despite the benefits claimed, the complaint alleged, none of the products is an adequate treatment for, or will give complete relief of, these disorders. None has any benefit beyond temporarily relieving minor aches or pains of the conditions, according to the Commission. The orders also prohibit representations that they penetrate below the skin or have a substantial direct effect on body structures underlying the area of application. Also prohibited are claims that the products relieve pain for many hours or any specific number of hours. Finally, Mentholatum and Omega Chemical must not represent that their products provide a new or more extensive type of relief than competing products.

Warner-Lambert Research Set-up

The Warner-Lambert Research Institute will conduct all research in all phases of the company's product areas. These areas range from ethical and proprietary drug products to cosmetics and toiletries. Dr. L. Earle Arnow, president of the Institute, has announced the staff appointments.

Dr. Scott, who was formerly director of research for the Warner-Chilcott Division, is Vice-President for Basic Sciences. He will direct the work of the departments of biochemistry, microbiology, organic chemistry, and physiology.

Dr. George Mast is Vice-president for Product Development, having held a similar position with Warner-Chilcott Laboratories. He is responsible for all new product development, the department of pharmacy and dental product research.

Dr. Donald H. Powers is Director of Toiletries and Cosmetics, having previously been Director of Cosmetic Research for the Lambert-Hudnut Division.

A new Division of Clinical Research will be headed by Dr. Joseph M. White, of the Warner-Chilcott Division staff, until a permanent Director of Clinical Research is appointed. This unit is responsible for the clinical investigation required to establish the safety and efficacy of all new products.

Eliot Steinberg has been appointed Director of Research Administration. He will assist Dr. Arnow directly in his administrative functions of the Research Institute, with the additional assignment of supervising the operations of library and laboratory services and the Department of Technical Information.

Searle Chemicals, Inc.

Searle Chemicals, Inc., a subsidiary of G. D. Searle & Co., has been formed for conducting Searle's efforts in the chemical field. Having its headquarters on Searle Parkway, Skokie, Illinois, and an eastern office at 280 Madison Avenue, New York, the company will have as the chairman of its board, John G. Searle, president of G. D. Searle & Co., and as its president, Dr. Irving V. Sollins, long associated with the steroid industry. For the present, the major efforts of Searle Chemicals will be devoted to sales of bulk steroid intermediates used in the manufacture of many ethical drugs.

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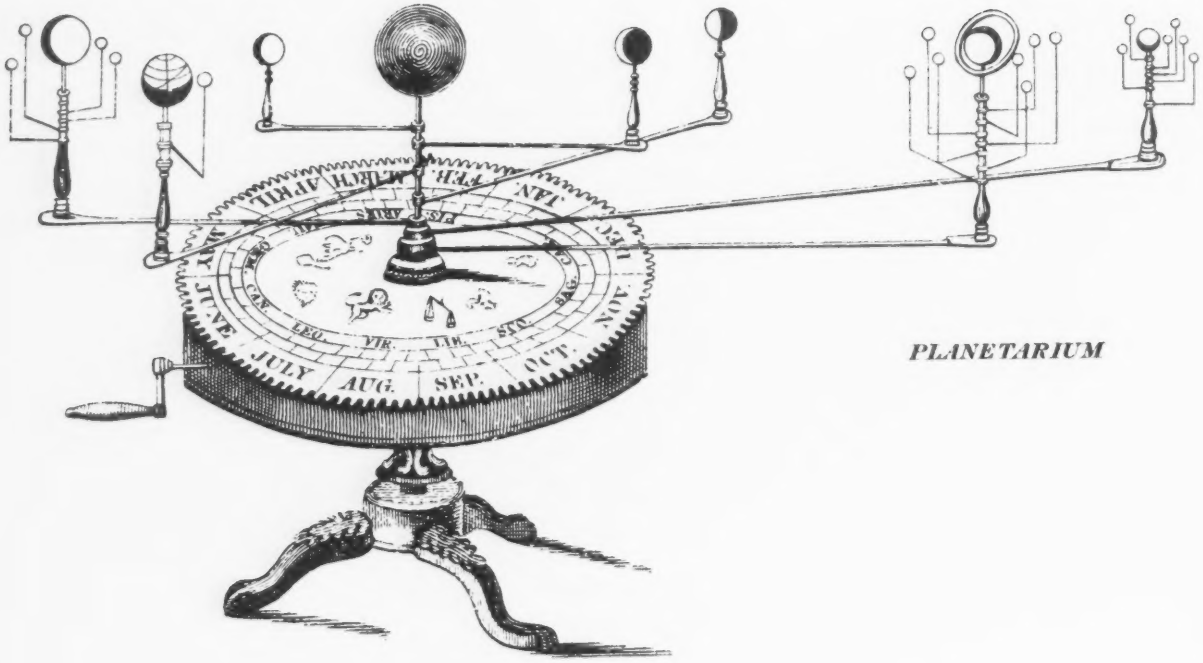

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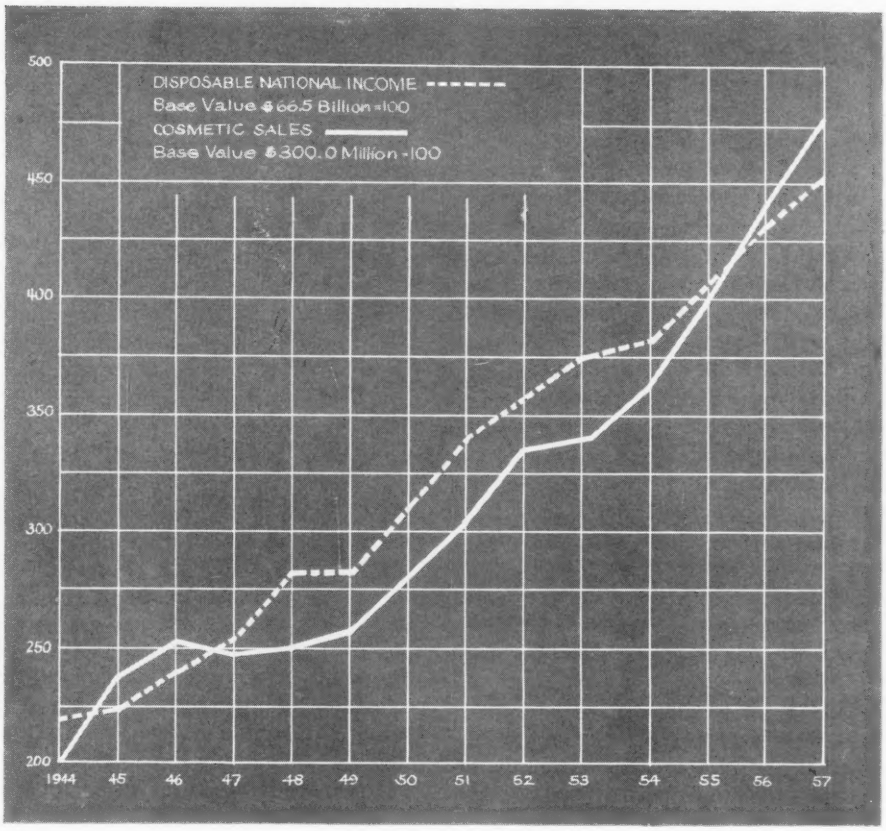
COSMETICS 1957



In a reversal from the previous year, the 1957 sales of perfumes, cosmetics and other toilet preparations, excluding soap, showed a greater increase in the sale of non-taxable items, than in taxable items, but the difference was only one per cent.

The estimate of the Toilet Goods Association for sales at retail for 1957 is given as $1,430,700,000, a gain of 8.3 per cent over 1956 sales of $1,321,000,000. Sales of taxable cosmetics, based on government tax reports, stands at $987,140,000 for 1957, a gain of 8.0 per cent over the 1956 sales of $913,910,000. The sales of non taxable items, arrived at by subtracting the sales of taxable items from the TGA estimates, stood at $443,560,000 for 1957, a gain of 9 per cent over the 1956 figure of $407,090,000. The comparable percentage figures for 1956 compared with 1955 showed a gain in all toiletries of 10.8 per cent; a gain in taxable products of 14.3 per cent; and a gain in non-taxable cosmetics of 3.6 per cent.

The non-taxable items include tooth pastes, dental powders, and dentifrices generally; antiseptics; baby oils, powders, and creams; shampoos containing more than five per cent of saponaceous matter and sold for cleansing; dandruff removers and remedies; shaving creams, soaps, powders, and aerosols; electric shaving preparations serving the same functional purpose as a lather or brushless shaving cream, but not astringents or after-shaves; foot creams, balms, powders for tired, aching, burning feet, but not deodorants or antiperspirants; grease paints and theatrical make-up; all cosmetics used by operators in beauty and barber shops.

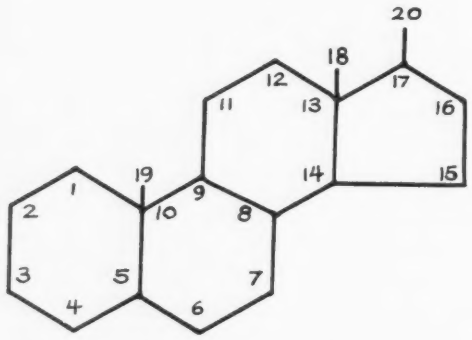
The TGA pointed out that the increase was fairly general throughout the entire line, but that dentifrices "again showed a remarkable gain of more than 12 per cent, and sales of these products through food stores increased by more than 16 per cent." Shaving preparations, due to the continued popularity of the more expensive (per shave) aerosol, again increased by nearly 8½ per cent with food stores gaining more than 12 per cent. It is probable, says TGA, that total units of shaving creams and similar preparations were not greater and probably were lower than in the preceding year.

The increase in hair preparations which has been

(*Continued on page 811*)

STEROID RESEARCH*

BY NORMAN APPLEZWEIG, NORMAN APPLEZWEIG ASSOCIATES



1 —Δ^1 Increases anti-inflammatory action (prednisolone, etc.)
3 —CH_3 Increases salt retention ($2CH_3$, 9F, =90 x DOCA)
3 =O Essential to corticoid, androgenic and progestational action
Methoxy reported to give longer lasting effects (3-methoxy pregnenolone—Huffman)
4 —Δ^4 Essential to hormonal activity. Not essential for anesthetic activity
—C1-$\Delta^{4,5}$ Decreases androgenic activity without diminishing anabolic action in androgens
—CH_3 Diminishes androgenicity while increasing anabolic activity
6 —Δ^6 Increases glucocorticoid activity
—α-CH_3 Increases glucocorticoid activity. Increases potency of progestins
9 —α-OH Decreases anti-inflammatory action of hydrocortisone
—αF Increases anti-inflammatory action of hydrocortisone. Increases salt retention even more. Increases androgenic activity of 11, 17 dihydroxy, 9F
11 —β-OH Essential to anti-inflammatory action
—β-O Converted to OH in body
12 —F Increases anti-inflammatory action 12α F, 11β OH progesterone = activity of 9α, 11β OH progesterone
16 —α-OH Decreases salt retention of halogenated corticoids
— 9-X Reduces feminizing action while retaining anti-atherosclerosis activity of estrogens
17 —β-propionic acid α lactone Antialdosterone activity
—OH Essential for androgenic action, anti-inflammatory
—OH or —O Essential for estrogenic action
—$CH.CH_2\alpha$ on 17β OH 19-nor testosterone, orally active androgen
—CH‡CH Orally active estrogen (ethinyl estradiol) progestin (Ethinyl testosterone
—Br Oral activity in progesterone
18 —CHO Salt retention enhancement, aldosterone
19 —Removal of CH_3 (19-nor) Enhances activity of testosterone, progesterone, DOCA
—4,5-dihydroallo derivatives of 19-nor androgens show potent antiestrogen activity
20 =O Essential to progestational and corticoid activities. 20-Nor progesterone has both progestational and androgenic activities.
21 —OH Enhances anti-inflammatory and salt retention in corticoids
—F Diminishes salt retention in 9-F corticoid

The history of steroid hormone research has been a clear demonstration of the dialectics of necessity and invention. With each demonstration of a biological action or therapeutic usefulness for a given structure, there followed intense activity to produce this compound and make it available for use. Until now, the commercial emphasis and most of the research energy has been devoted to finding the right production process. The emphasis has now shifted. The feverish activity of the last ten years has produced a glut of ingenious technics and production know-how. Robert Waterman, Executive Vice President of Schering, once said: "The problem is not how to make steroids—that's fun. The problem is how to sell them." His own company supplied the answer to that question when it came up with improved modifications of the corticoids, namely the "Meti" steroids, prednisone and prednisolone. It is a simple problem to sell better products. There is definitely no problem in selling new products for new uses. New and better products are precisely what the researchers are now looking for.

The "Meti" steroids represent a major breakthrough in steroid research. The significance of these compounds far exceeds their improved therapeutic value. While it had been known that the natural steroid hormones possessed markedly different biological properties, based on minor differences in structure, prednisone was a clear demonstration that structural alterations introduced in the laboratory could result in compounds having increased therapeutic efficacy. This was an important achievement because it broke the bonds which chained the thinking of many researchers to attempts to imitate nature instead of improving upon it.

Because the study of natural hormones has been pursued so intensely, it is now doubtful that many new "natural" steroid hormones remain to be discovered. Prior to the discovery of prednisone there had been many attempts to modify the nature of steroid hormones through structural alteration. The body itself serves as an enormous fount of knowledge for such procedures. Ralph Dorfmann, of the Worcester Foundation for Experimental Biology, has brilliantly summarized his own studies and those of others in the field of intermediary steroid metabolism, proposing a master scheme whereby the handful of natural steroid hormones (only six are recognized) are built up and degraded in the body to over 600 different steroid analogs. Only about 100 of these naturally altered steroid structures have been isolated and studied; some possess weak hormonal activity, but most are inactive. Dorfmann and his coworkers have demonstrated that these alterations are brought

*From a forthcoming book "Steroid Hormone Products"

about by enzymatic systems which oxidize, reduce, detoxify or otherwise inactivate natural hormones. Is the goal then to produce structural alterations in the natural hormones to help avoid or delay the inactivating mechanisms of the body? Since we do not yet know how a single steroid hormone works, we cannot presume to know how to increase hormone activity *per se*. We can attempt, however, to explain the improvements achieved with the "Meti" steroids and the halogenated steroids by studying their rate of inactivation. Steroids seem to act mainly as regulators of the rate at which body processes occur. The first goal of steroid researchers then seems to be to alter the rate at which these *rate regulators* may persist in their role.

Why an androgen is androgenic and why an estrogen is estrogenic must remain a mystery until we learn to understand the mechanisms of hormone action. Any attempts to introduce structural alterations which will directly increase hormonal activity must be purely empirical. Various research groups are engaged in "crash programs" to produce as many new steroid structures as possible to find improved activity. Such an empiric approach imposes a tremendous burden on the shoulders of the steroid biologist who hardly knows what to look for next. Since our knowledge of the relationship between steroid structure and function is so primitive it is no wonder that there are constant surprises. Theoretically, any one of the thousands of steroid compounds which have been made in recent years each deserves years of study by the biologist before he can honestly say what its potentialities are. There is only one way to break the bottleneck and that is through *basic research*. Unless and until basic advances are made in our knowledge of the mechanism of hormone action, most of these compounds are doomed to remain on the laboratory shelf as useless artifacts of our present efforts in steroid research.

While our understanding of the action of hormones on the cellular level awaits further clarification, a second level of knowledge, the dynamic biochemistry of the hormones, dominates the thinking in steroid research. Knowledge of how hormones *act* can lead us to develop super hormones, but knowledge of how hormones *interact* can teach us more about how to use steroid compounds.

The classic means for investigation in endocrinology has been through extirpation of the glands which produce hormones, followed by isolation of the active substances in the gland extracts which would restore the function lost by the removal of the gland. While this type of procedure has led to most of the important discoveries in steroid physiology, it has unfortunately failed to reveal the intricate nature of hormone action in the whole organism. In every case, the organism continues to live in the absence of a single steroid hormone or its glandular source. Obviously, compensatory mechanisms exist which enable life to continue but in no case can this life be considered successful. The hormones seem to function to keep the organism well and in balance. The secret of this hormone equilibrium or balance is the next most important source of inspiration to the steroid researcher, for here lies the key to how to use the steroid compounds which he presently has and which he will make in the future.

Undoubtedly, this hormone balance is mediated through mechanisms which regulate the amount of circulating steroid hormones and which control their production and destruction. As these steroids are produced or destroyed, intermediate substances are involved which may act synergistically or antagonistically to modify the action of the active substances. Opportunities exist, therefore, to develop steroid hormone precursors, potentiators, and inhibitors. Clear cut cases of steroid molecular antagonisms have not yet been demonstrated but there is every reason to believe that competitive inhibition plays a key role in maintaining hormone balance. Androgens and estrogens do antagonize each other but it is believed that this is accomplished indirectly through back pressure on the pituitary which produces the trophic hormones which stimulate the glandular production of both of these hormones. Estrogens and progestins seem to act synergistically and in some cases the steroid hormones seem to require pituitary hormones for coactivity. The goal here for steroid researchers then, is

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PROPRIETARY ASSOCIATION MEETING

Pleading for all branches of the drug industry to give the National Drug Trade Conference, acting for the entire industry, a chance to work out the current controversial problem of restrictive sales of drug products, Sherwood E. Silliman, retiring president of the Proprietary Association, said, "To this end, it would be helpful if, in the meantime, there could be a moratorium on legislation relating to the revision of state pharmacy laws as they bear upon the exemption for proprietary medicines, but I guess this is too much to hope for . . . .

"I am afraid the major occupation of our Association and other pharmaceutical associations will still center for some time on what Dr. Fischelis calls the 'extended controversy regarding the proper retail outlets for supplying drugs, medicines and poisons to the public.' But I honestly do believe a beginning towards a solution may now be in the hands of the National Drug Trade Conference and the 'ear-piercing' aspect of the controversy may have reached its crescendo. If we can keep the channels of communication open, some day a solution acceptable to all segments of our industry may be reached."

With respect to the restrictive sales controversy, Dr. Howard A. Prentice, executive vice-president and treasurer of the association, told of the action of the American Pharmaceutical Association House of Delegates in adopting a resolution which would eventually expel the one delegate the A. Ph. A. by-laws grant the Proprietary Association. This one delegate, who for many years has been a scientist, is only one of well over 100 members of the House of Delegates.

Pointing out that the Proprietary Association has cooperated on the restricted sales problem through the National Drug Trade Conference, with pharmacy authorities in Virginia, North Carolina, and Iowa, as well as in other states, Dr. Prentice said:

"One of these common interests areas is the economic aspect of the druggist's business. We believe that the retail druggist has a right to merchandise packaged proprietary medicines by modern self-service methods, and to secure the advantage of the low costs of retailing these products to the consumer. It is the economic interest of the retail druggist to retain his right to use the best of modern merchandising methods in all his departments, including proprietary medicines, which can be done *without sacrifice of the professional standing of the pharmacist.*

"We believe that self-selection and self-service as a method of distribution of packaged proprietary medicines, as a merchandising procedure by druggists, does not lower the professional standing of the pharmacists for the following reasons:

"1. Proprietary products are compounded by pharmacists or pharmaceutical chemists in manufacturing plants so that professional skill and training are used in compounding and packaging.

"2. Self-selection and self-service of proprietary drugs in drug stores does not conflict with the professional standing of the pharmacist in the dispensing of prescription drugs or of over-the-counter pharmaceuticals which are not and probably never will be promoted and advertised directly to the public. The skill, knowledge, and training of the retail pharmacist is and always will be needed in dispensing these latter drugs to the public.

"3. There is no loss of prestige or dignity of the

SHERWOOD E. SILLIMAN

pharmacist by a well planned and efficiently conducted self-service drug section for the proprietary medicines which are widely advertised, properly labeled, packaged, and are completely safe when used according to directions on the label."

Telling the proprietary manufacturers that they need the support of the medical profession, Dr. Albert H. Holland Jr., Medical Director, Food and Drug Administration, said:

"Immediately many of you are probably saying to yourselves, we don't sell to doctors, we sell the public. If this is true, if this is the general operating philosophy of the proprietary industry, then I say to you, you are missing the boat. Here is a professional group whose help you should have, I dare say need! Doctors still influence a large share of drug sales throughout the country, yet only a handful of your products are made directly available to physicians by sampling. How many proprietaries do you advertise directly to the physician for his professional use? How much good sound educational information—valuable to him and to you—do you put at his professional disposal? The law does provide that you can send information directly to the physician within professional channels that otherwise cannot appear in labeling or advertising. Yet few do.

"Perhaps the critical question to be posed is how many proprietary products are actually supported by good sound scientific data? It might well be revealing to the truly courageous to inquire of your scientific directors for a list of all of the medical publications on each individual product that he would recommend for a general mailing to the medical profession. If you are satisfied with his report and recommendations to you, then I urge that you capitalize on some of these untapped assets. If such is not the case, however, I urge with equal vigor that you set about establishing the requisite studies so that you are in a position to aggressively approach the physician on the basis of facts rather than dwelling only on capturing the public fancy.

"There are still too many proprietary products not acceptable for advertising in first-rate medical journals. There are far too few good papers on proprietaries published in the medical literature. I earnestly believe your efforts will be well spent and well rewarded if you support work which can lead to the publication of good scientific papers as opposed to the all too common "cookbook" paper for promotional purposes only.

"Some of you do depend on doctors to run your clinical tests. I know this for a fact, I saw it on television. Yet I question how much heed some pay to the oft-expressed ethical principle that physicians should not be portrayed in promotional pitches on the screen. Oh, but you say there are only 150,000 or so practicing physicians and they're really not our customers anyway. Let me point out that these 150,000 individuals are in a position to influence many millions of people who are your customers. By ignoring good taste and the wishes of the medical profession, you are courting trouble in my opinion. By such actions you are unwittingly stimulating the development and sale for so-called over-the-counter ethicals. You are directly creating a market for your major competitor, and you have the doctor's help, but on your competitor's side. The greatest threat to the proprietary market today in my judgment, comes not from organized pharmacy, but rather from the entrance of prescription manufacturers into the nonprescription market. Similarly, I believe that the greatest threat to pharmacy comes not from the sale of proprietaries in non-drug outlets, but rather from the fact that their battle may be lost because they fail to distinguish the forest from the trees. Preoccupation with attempting to keep proprietaries in the drug store precludes the devotion of their attention to the constructive long-range effort necessary to retain the over-the-counter ethicals in the pharmacy. I may well be wrong; I pose not as a prophet, but I do express these opinions sincerely and frankly."

With regard to the restrictive sales problem, Dr. Holland observed:

"Now what about your relationships with pharmacy. I cannot escape the unhappy observation that as one peruses the reports of your annual meetings, the subject of restrictive sales has been presented again and again. Several efforts have been made over the years to find a resonably satisfactory solution, but

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ROBERT B. BROWN

EYELASHES

SOL GOODMAN, DIRECTOR, GOODMAN LABORATORY, 518 WEST 22ND STREET, N.Y.C.

False eyelashes are becoming a standard part of getting ready for the club dance. No longer are they confined to the model's and actress's kit. Long curved eyelashes, like smooth moist skin, are associated with youth and beauty. The validity of the association of long eyelashes with youth was verified by the anthropologist, F. Rozprym.[1] In his study of the eyelashes and eyebrows of the entire population of a small town, he found that, as people get older, their lashes get shorter and straighter. Of the people younger than 16 years, 94 per cent had long curved lashes. Of the people older than 35, less than 20 per cent had long curved lashes. The middle teen years are the critical period during which long curved lashes are replaced by the shorter and straighter ones.

Historically, false eyelashes were pretty much a do-it-yourself project until the nineteen twenties. Since then, possibly due to the extra skill needed for their application, the market for them has been spotty and slow as compared to other beauty aids. Many of the lashes presently stocked in our beauty salons are imported from Europe. The United States has issued only a half dozen patents on artificial eyelashes since 1911. However, one has only to view some of the very old movies on Television to observe the great improvements which the makeup people have brought about in their lash application to actresses in the last forty years.

Categories of Eyelashes

Eyelashes may be classified according to the way in which they are fastened to the eyelid. Single hairs may be glued individually to the users own lashes. Other types are constructed with the hairs attached to a base. In use, an adhesive is put on the base which is then joined to the eyelid.

The earliest style is still used by show people: adhesive tape with hair stuck to the underside, or the hair may be laminated between two layers of adhesive tape. It may be too bulky, heavy and easily noticed for general use, but it is suitable for use on stage where it is viewed from a distance.

The lash hairs may be tied to a string which is treated with a liquid glue, sometimes called fixative, and placed at the edge of the eyelid before the glue dries. This type is light in weight, remains in place until the wearer decides to remove it, is adaptable to any number of lashes per inch, is receptive to mascara, and may be given a natural appearance by a careful brushing of the lashes outward from the center while the mascara is drying. It has the drawback that the glue may form a strong bond between the unit and the wearers own lash hairs, causing some of these to be pulled off when the unit is removed.

Units which have a wide base may be attached to the eyelid with either a conventional glue or with a pressure sensitive adhesive. The wide surface contact between the base and the eyelid permits the use of a soft pressure sensitive adhesive which maintains an adequate bond yet is not likely to pull unduly on the wearer's lashes or eyelid when it is removed. This type is represented by a plastic unit in which the lashes and base are part of the same sheet of plastic.

This last type of eyelash unit has the lashes cut at such an angle that they assume the desired outward sweep without further attention. The wide base, covering a large portion of the eyelid, has been colored with a translucent lacquer to provide a built-in, smear-proof eyeshadow.

Eyelash Patents, United States

In 1911, Taylor[2] received a patent describing an artificial eyelash unit in which hairs are attached by a wax process to a crescent shaped piece of material, presumably cloth-like, skin colored or transparent, which is to be attached to the eyelid by means of an adhesive.

In 1923, Nessler[3] received a patent on a method of making false eyelashes by stringing fibers of hairs through a sheet of flexible material, folding over the sheet, and cementing the hairs between the folded

layers. The laminated sheets are trimmed to form a narrow base to be cemented to the eyelid. The hairs are trimmed to shape and curled with a type of heated curling iron.

In 1933, Birk[4] received a patent mentioning eyelashes in which the lash hairs consist of fibers looped over a transverse string. However, there is evidence that this type of unit had been known in Europe before 1933, and had been imported and sold in the U. S.

In 1937, Kaiser[5] patented a system in which groups of fibers or hairs are held parallel to each other by an interweaving of threads at the outer tips so that they may be glued to the eyelid in groups rather than one at a time.

In 1947, Phillips[6] received a patent on an eyelash unit in which individual fibers are fused to a base of dissimilar material. Before the fusion process, the fibers are coated with a material which will fuse properly with the base.

In 1958, Goodman[7] received a patent on an eyelash unit in which the lashes and base are of the same material, and of the same piece of material. As an example, she cites a unit in which the lashes are cut as a fringe on a piece of flexible plastic sheet.

Eyelash Materials

Since the nineteen forties, many new, strong and flexible plastic films and fibers have become available. Both Phillips and Goodman have taken advantage of the possibilities offered by these new materials such as vinyls, acrylics, nylon, and polyester film, to produce eyelashes with new forms, new styles and improved properties.

The measurements used by textile technologists to classify fibers were found to be useful in examining materials for use in eyelashes.[8, 9, 10, 11] Some of the properties are subject to quantitative measurement: swelling in water, moisture regain, recovery from deformation, modulus of elasticity and resistance to bending. Other properties were judged qualitatively: flame resistance, colorability, moldability, and "appearance intensity".

The appearance intensity is a term coined to describe the degree to which the lashes bring emphasis to the eyes of the wearer. Although highly subjective, with the qualitative ratings of weak, moderate, good, strong and very strong, this concept was useful in comparing the effects of changes in the lash characteristics, such as color, length, width, thickness, and degree of slant, on the appearance.

The color of the lashes must be quite dark to achieve an appearance intensity of moderate or good: light colored lashes are quite ineffective. Of course, lashes with an intense and bright color may have a very strong appearance intensity, but these have not had a wide acceptance at this date.

The length of the lashes affects the appearance mainly by the additional color which they carry to the area around the eye. Up to a point, the longer the lashes, the larger and more dramatic do the eyes appear. The length of the lashes is so much a matter of personal taste of the wearer that it is not possible to predetermine the most suitable length. They must be supplied extra-long to be trimmed by the user to the length she prefers.

The width of the lashes is a critical factor in the appearance intensity. Very narrow hairs give a fuzzy or cloudy impression with a weak appearance intensity. Very wide hairs may give a very strong appearance intensity, a prominence to the eyes which may be coarse and in poor taste. The optimum width of the fiber is between 125 and 225 microns. In comparison, human hair averages around 85 microns in thickness, ranging between 15 and 110 microns. A good coating of mascara about 25 microns in thickness all around the hair will increase its width by 50 microns, bringing it into the range of optimum appearance intensity. Many women seem to have discovered this fact for themselves.

Although the width of the fibers affects the appearance intensity very strongly, the thickness has hardly any influence at all. As long as the lash is stiff enough to hold its shape, the thickness may be reduced to a small fraction of the width with no appreciable change in the appearance.

When wearing long lashes, many women brush them outward for a more natural look. Generally, this is done during or immediately after the application of mascara so that the drying mascara will hold

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FINAL ADMA MEETING

By supporting basic studies in its own laboratories and in industry, the government can do the most for drug research in this country, Dr. Ernest H. Volwiler, chairman of the board of Abbott Laboratories and president of the American Drug Manufacturers, told the final annual meeting of the ADMA. He said further that the government would do well to leave the applied phases of such research in the hands of the drugs industry "which is best qualified to handle such assignments." Continued Dr. Volwiler:

"At times there have been efforts to put the government into phases of the medical and drug field where we believe it has no responsibilities and where private industry can do the job better. Such efforts have most commonly had their origin in certain congressional committees rather than in the government agencies themselves. Fortunately, the latter have been directed and manned by far-seeing administrators and scientists who understand the origin and qualifications of fundamental and applied research.

"Since an invention is essentially a useful result derived from known and partly understood basic principles, it is from applied research rather than from basic research that inventions must spring. Applied research must of necessity be nurtured in basic research, lest the creation of new ideas become insignificant.

"The striking progress which our manufacturing industry has accomplished has been based to a very large degree on our patent system. It is incomprehensible that this system, so uniquely American in nature, should be so misunderstood by the public and their elected representatives who have been the beneficiaries of the system.

"They sometimes ignore the fact that patents are issued to encourage disclosure and to avoid secrecy; that such disclosure encourages and expidites further research; that patents tend to stimulate competition, rather than stifle it; and that no other nation during the last generation has produced as much that is new and useful. Add to this the fact in terms of price and value, American drugs constitute one of the best bargains available to our people."

Describing the government's cancer program as a unique situation, and saying that the diagnosis is well worked, out, but that there is little in chemotherapy available, Dr. Volwiler commented:

"The government has set out to stimulate progress by financially supporting empirical studies in cancer. Although this program is vast and costly, and the early outcome so speculative, our industry has agreed to cooperate and a strong beginning has been made, using both private funds and government money under contract.

"Delays in completing such contracts were due to industry's dissatisfaction with the proferred patent agreements, and the so-called 'march-in' provision under which the industry contractors' rights were inadequately protected. More recent discussions with the members of the Patent Board of the Department of Health, Education and Welfare have disclosed an appreciation of our position and a sincere interest in providing patent clauses which would be fair to risk-taking industry while adequately protecting the public. There is reasonable hope that these problems can soon be settled.

"Some congressional committees have looked on the cancer chemotherapy mechanism as a model for attacking various disease entities. For example, efforts in varying degrees of intensity have been put forth to set up programs, similar to the one for cancer, in psycho-pharmacology, heart disease, and neurology. Some of these suggestions have had the undesirable feature of a government sponsored, supported, and controlled research program. The idea overlooks the already effective privately supported research and development that is going on. The suggestions of the broad projects are based on the twin illusions: 1) that the job won't be done expeditiously unless the government sponsors a major share; and 2) that the government can obtain enough qualified scientists to do the job without robbing other equally important projects of trained and qualified investigators. I think industry is agreed that these concepts are illogical and untenable."

More Drug Study

Dr. Albert H. Holland Jr., Medical Director, Food and Drug Administration, pointed out a number of trends developing in the industry. First, he suggested that in the development of high potency drugs there will be longer periods of investigation with larger

DR. E. H. VOLWILER, President

series of patients and more clinical investigators. He also anticipates more comprehensive and informative labeling. Also, he said, both industry and the FDA must try to develop better means of communication with medical profession.

Dr. Holland said that the longer period of study would not of necessity be due entirely to the pressure of government agencies, but that responsible manufacturers would find it advisable "in their own self-interest." "There is, too, a trend, and I believe a necessity," he continued, "for developing direct relationships and avenues of communication between the academic clinical investigators and profession staff of our (FDA) new drug division."

Regarding more informative labeling, Dr. Holland said:

"Potent agents make it mandatory to supply the physician with all the known facts at the outset. This seems self-evident, yet there is still indication of reluctance on the part of some manufacturers to do so. . . . You must sell against your competition, but you must tell your customer, the physician, how to use that drug successfully and safely. Potent drugs, like buzz saws, are capable of great good and great harm."

Physician Communication

As to the problem of better communication with the medical profession, Dr. Holland stated:

"We have no satisfactory way, short of resorting to press and radio, of disseminating critical information to the physician. This is not an easy problem to solve. One constructive suggestion that has been advanced is that the administration have printed some standardized distinctive type of envelope to be furnished to manufacturers for use when they are required to make drug warning mailings to the profession. Given adequate publicity in medical journals, physicians would come to distinguish these envelopes from routine promotional literature. There are perhaps other alternatives which merit consideration and we will be happy to have your suggestions.

"Another aspect of this same problem of communicating with the doctor deserves attention. For several years I have heard responsible people both in and out of industry bemoan the fact that only a small proportion of physicians ever see the official product brochure or package insert. I think it is fair to say that the vast majority never get any further than the hospital pharmacy or drug store.

"Yet this is one of the most valuable and informative pieces of drug literature concerning your product. We are now considering what steps can be taken to insure that it gets into the hands of physicians. It

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Patchouly Oil

and one of its strange cousins

BY STEFFEN ARCTANDER, COLGATE-PALMOLIVE CO.

Just as we say "Vetiver Bourbon", "Bois de Rose Brazil" "Sandalwood Mysore" etc., it has been common practice to say "Patchouly Singapore" for many decades. This trade name, like many other similar names, has a continuously decreasing relation to the actual origin of the oil in question.

Singapore, although geographically an island, belongs to the Malacca peninsula. Singapore itself is now a British Crown Colony, surrounded by "troublesome areas". It is true enough, that the Malaccan peninsula once was the main producer of patchouly oil, and that most of the oil produced was shipped from Singapore, one of the busiest trade-centers of the Far East.

But things have changed, not only because of wars, riots, and communist guerillas. The strange figures, published in pre-war days, told us that the Malay states imported more patchouly oil, than they exported. This was at least one obvious proof, that the name "Singapore Patchouly" was misued. So, it has been known for a long time that the main production of patchouly oil took place in Sumatra, and not on the Malaccan peninsula. A rough estimate says, that about 10 per cent of the Singapore brand patchouly oils are derived from malaccan plants. The origin of the term "Singapore oil" probably comes from the fact, that a few, very large, Chinese distilleries in Singapore decades ago bought considerable quantities of patchouly leaves from Malacca and Sumatra, and distilled the leaves in Singapore.

Unfortunately, the bulk of patchouly oil is no more distilled by people with that life-long experience and know-how, which is so extremely important, particularly in the case of patchouly oil. The above statement does not include oils distilled in Europe and the United States. They amount to quite a considerable quantity, and they range high among the various qualities on the market. It is not as simple as just taking the leaves from the plant and blowing steam through them. The problems behind the cultivation, the choice of plant material, the treatment of harvested plants before distillation, and the art of distilling correctly this fine perfume oil, have all been described so perfectly well and comprehensively in Guenther's "The Essential Oils", vol. III, pages 552 to 575.

During a recent trip to islands in the Indian Ocean, from some of them producers of patchouly oil, although not very important producers, I hoped to get an answer to my question: "What has happened to patchouly oil during the past 10 or 20 years?". In this case, I dare say, that it is not a matter of change in the perfumer's nose. Most perfumers and analysts will certainly agree that patchouly oil *has* changed, and that only very rarely a decent lot of oil appears on the market. By the way, the appearance of good lots or very good lots of patchouly oil from time to time only proves that the "good old patchouly" still can—and is being produced, and that nothing is wrong with the perfumers' noses or memories.

The patchouly oils, which I had an opportunity of studying at closest range, were neither of the "*very*

Patchouly plants in Nossi-Be. In the upper left corner is my 16 mm. Bolex-Paillard Movie Camera (for comparison).

good, old type" nor of the horrible, bodyless, dry-woody oils, commercially common today. While they possessed the correct odor type, they were generally weaker than the pre-war Singapore oil, or than a top-quality oil of today.

The patchouly plantations in Madagascar itself have failed to catch the interest of the growers, and little, if any, patchouly oil is produced in Madagascar today. When I passed Moramanga in eastern central Madagascar, I observed a few, abandoned fields (plantations among coffee), but this district has recently been cultivated with rice to such a degree that it has attained a completely "oriental" character. A little further north, at lake Alaotra, a fully mechanized rice cultivation is quite a sight in itself. The anual production of rice in Madagascar is now over

The home of a french (earlier indochina-farmer) Cocoa-planter in the Sambirane region, opposite Nossi-Be. Patchouly was grown here a few years ago, but Manioc, Cocoa, Coffee and Sugar cane has taken over.

1 million tons, 95 per cent of which is consumed locally. Later on, along the Northwestern coast of Madagascar, I met some abandoned patchouly fields where now manioc and cocoa are cultivated. This region faces Nossi-Be, one of Madagascar's tiny perfume islands.

In Nossi-Be, however, patchouly is still cultivated in the shade of coffee, or among the trees, which sup-

Native fishermen in a small bay at Hellville, Nossi-Be. Note the outrigger-canoes, exactly like those from the South Pacific.

The "Ravenala", the "Traveller's Tree", device of Madagascar. This is the bense, low jungle, covering the East Coast, and the Northwest Coast of Madagascar.

port the black pepper vines, etc. The patchouly plant, which is a labiate, is probably a native of the Philippines, and this brings once more to mind the fact that almost all of the cultivated plants in Madagascar (and surrounding islands) are derived from the so-called "Melanesia": Cloves, ylang-ylang, litchie, longoza, champaca, sandalwood, cinnamon, ginger, black pepper (India). Vanilla is one of the exceptions. Some of the readers will probably say: "No wonder,

Monsieur Gomes (left), an indian middleman (right) talk over a deal with a native madagascan planter.

for Madagascar was first invaded by Melanesians!". Correct, but it remains a surprising fact, that all these useful plants were brought to Madagascar, and many of them became important argricultural articles.

In Nossi-Be, it was mainly the SPPM (Societe des Plantes a Parfum, Madagascar), that took care of patchouly distillation. French or native settlers cultivated the plant in small lots. The fertile soil in the island is favorable to the patchouly, which is a very "hungry" plant. But the troublesome weeding, the care and nursing around the patchouly plants, make this cultivation rather unpopular among the settlers who can make more—and faster—profit from coffee or other "best-sellers". The Nossi-Be patchouly oil is,

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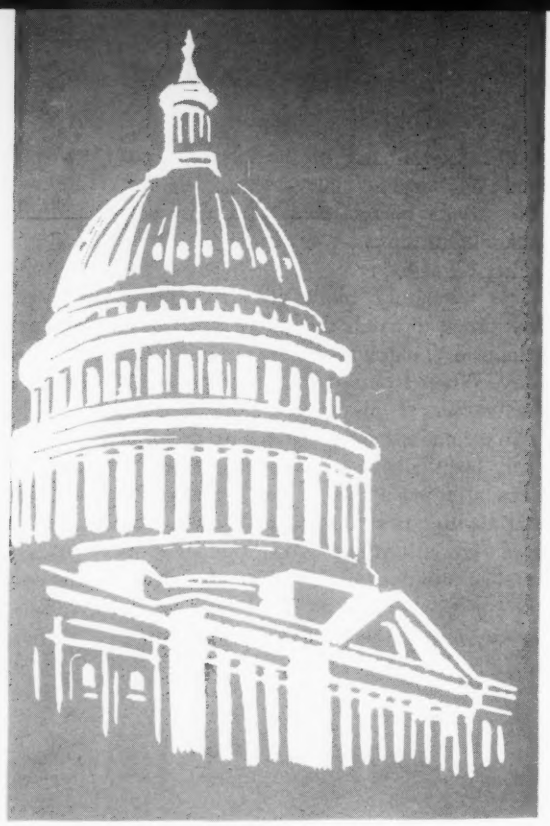
WASHINGTON AND THE DRUG INDUSTRY*

BY KARL BAMBACH
EXECUTIVE VICE-PRESIDENT
AMERICAN DRUG MANUFACTURERS ASSOCIATION



In drug procurement the federal government is a customer, purchasing supplies usually by going through a bidding procedure. During peace time, the magnitude of drug purchasing by Uncle Sam is not overwhelming, amounting to approximately $50,000,000 a year. About forty per cent of this is spent by the Veterans Administration, and a little more than one-half by the Defense Department. In times of national emergency, as those of us who were in the drug supply field during World War II can testify, the picture changes materially. It does not, however, take a war to bring about this change: just recall the Salk poliomyelitis vaccine episode.

As soon as the favorable report on the vaccine was given wide publicity, certain elements on Capitol Hill and in New York City urged that the product be socialized in some way. Some advocated governmental control of distribution and price; others wanted the federal government to purchase all the vaccine produced and give it away. The final Congressional decision was to provide federal funds to purchase enough vaccine to immunize one person out of every three in the age group susceptible to poliomyelitis; actually, some $55,000,000 were used for this purpose.

During the debate on Capitol Hill a major issue arose concerning the furnishing of "free" vaccine only to those unable to pay for it. Any limitation of this kind was bitterly opposed by the group which favors broader governmental powers generally.

The final legislation prohibited a so-called "means test" intended to restrict charity of this kind only to the poor. Thus we witnessed complete abandonment of the traditional principle that charitable services and supplies are to be made available to those unable to pay, but not to the wealthy. In fact, in many communities parents preferring to pay to have polio vaccine administered to their children by their private physicians were not able to do so for a long time, because all available supplies of vaccine had been purchased by the government and were being distributed through charity channels.

Although I was able to dismiss in a few words the ordinary procurement of drugs by the government, it took many more words to describe what extraordinary procurement can mean. To summarize, when Congress wishes, it can direct the purchase and disposal of all or most of the supply of a vitally-needed drug. This by-passes the pharmacist, the wholesaler, and often the family physician. Such actions may represent socialization in the most objectionable and most dangerous sense. Dangerous, not only to our traditions of freedom, but dangerous to the public health. The safest way to administer drugs is under the direction of the private physician; mass immunization programs in schools and other public places encourage transmission of infections from one individual to another.

Drug Control

With few exceptions, the statutes regulating the manufacture, distribution, and dispensing of drugs follow the basic American principle of defining the individual citizen's responsibility, and expecting him

*Presented at the Rutgers Pharmaceutical Conference, New Brunswick, N. J., May 14, 1958

to observe it. Those who do not carry out their responsibilities are subject to legal action. However, it is important to keep in mind that in most instances each person is first given a chance to live up to his statutory responsibilities.

It works like this: anyone can legally enter the manufacturing, wholesaling, or retailing drug business. However, there are certain requirements he must meet, and certain requirements his product must meet. I often use, as an illustration, the ordinary traffic laws. We are permitted to drive automobiles freely, as long as we have met certain legal requirements, and as long as we observe certain rules of behavior. The laws do not insist that a government agent should sit next to each driver, to make sure that he obeys the law.

Previously, I referred to some exceptions to this general principle. The laws covering biological products, insulin, and certain antibiotics illustrate these exceptions. Here the government has a lot to say about who shall enter the business, and it decides which production batches can legally be distributed. In these cases, it is as if a policeman is sitting next to each automobile driver. These particular requirements are not consistent with our traditional policies of individual freedom. We should be eternally vigilant so that future drug laws follow the rule, and not the exception.

There are logical reasons for some of the nontypical control laws, such as the Virus, Serum, and Toxin Act. However, logical reasons do not apply today with equal force to the requirement that the government certify each batch of penicillin, chlortetracycline, chloramphenicol, streptomycin, and bacitracin, and their derivatives. There is no longer any reason for the Food and Drug Administration to serve as the centralized quality control laboratory for all the manufacturers of the antibiotics I have named. At the close of World War II, when the penicillin amendment was passed, Watson Miller, who was then Federal Security Administrator, sent a letter to Congress on behalf of the Food and Drug Administration describing the government's position on this extension of regulatory powers. This statement gives a clear impression that the government intended to exempt penicillin from the batch certification requirement when production and quality control procedures were adequately developed, and when sufficient scientific knowledge of the antibiotic had been obtained. At present, scientific knowledge of penicillin is more complete than that of most drugs. Its structural formula is known; its production is routine and precise; its medical behavior is well understood; its purity and strength are accurately controlled. Yet each batch of most dosage forms of penicillin must today go through the routine of government testing and certification, even though many antibiotics and all other drugs marketed in recent years are not tied to this requirement. It is high time that the anachronism of federal antibiotic certification be abandoned.

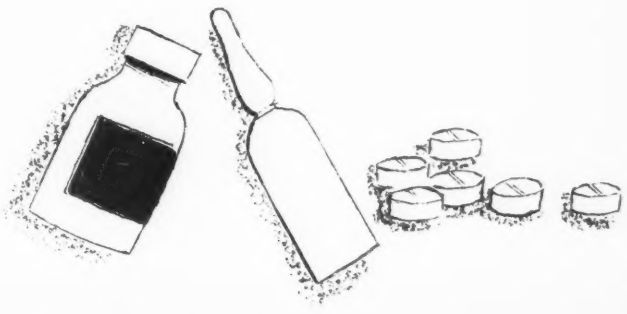
I must not dwell upon the peculiarities and inconsistencies of present drug laws to the neglect of their good features. The United States enjoys the widest distribution of the finest pharmaceuticals of any country in the world. Much of this is due to the wisdom with which our drug laws have been drafted and are administered. These laws provide adequate freedom for the imaginative, responsible manufacturer and distributor, yet they furnish protection for the public against irresponsible and predatory elements.

A vital factor in the regulation of pharmaceuticals is the development of proper standards of strength, quality, and purity. Here again the United States has a truly remarkable system. The responsibility for working out standards and methods of analysis is largely vested in private citizens, not in government officials. If you will look at the way other countries do this, you will find that we are indeed unique. The official standards for drugs, as defined by the U. S. Pharmacopeia and the National Formulary, are the results of the efforts of scientists in all walks of life. Some government scientists sit on U.S.P. and N.F. committees, but in this work they serve as private citizens.

Our procedure is far different from that of other nations where the central governments sets the standards for drugs, decides what methods shall be used in analyzing them, decides who shall receive licenses to make and sell them, and in many instances the government actually manufactures them. Through the United Nations and its subsidiary, the World Health Organization, other nations are exerting a constantly growing influence upon U. S. thinking in drug regulation. For instance, the Pan American Sanitary Bureau, which is part of W.H.O., is now beginning a comprehensive project of studying regulatory procedures in all Western Hemisphere countries, with the probable objective of recommending methods of making them more uniform.

In such international activities, there can be a real threat to the present freedom of the United States Pharmacopeia and the National Formulary from governmental interference and control. I emphasize this point because the maintenance of the U.S.P. and N.F. in their current status is of vital importance to everyone in the pharmaceutical and medical field. No

(*Continued on page 821*)



MATCHING PERFUMERY

BY J. R. ELLIOTT, PERFUME-FLAVOR CONSULTANT

The saying, "Imitation is the sincerest form of flattery," aptly describes the matching phase of perfumery, for the driving force behind matchwork is the effort to imitate someone else's success.

Matchwork (also known as "countersampling" or "duplicating") is the inverse of creative perfumery; it involves the production of a fragrance that simulates a fragrance idea already in existence. It may be regarded as a form of artistic plagiarism, since it is an exploitation of someone else's creative idea without his permission.

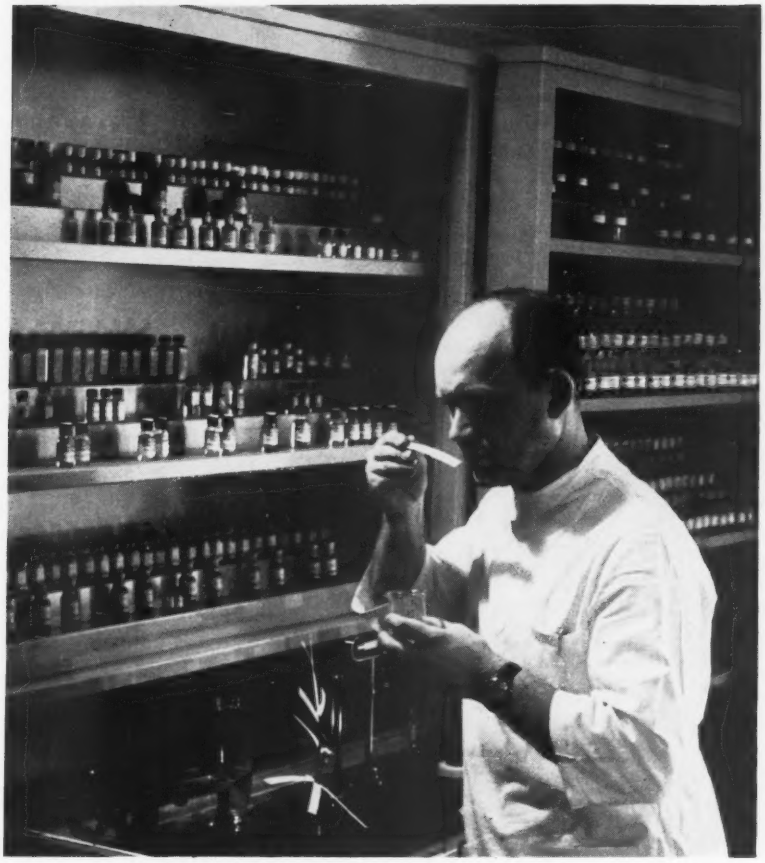
Matching constitutes a much higher percentage of the American perfumer's activity than of the European perfumer's because of the intensely competitive and price-conscious nature of the American market. The constant demand for a "good match" that is "just a little cheaper" places great pressure on the perfumer. As each successive price target is lowered, he must meet it by a corresponding sacrifice or compromise of some part of the quality of a match fragrance. Usually he begins by trimming the less conspicuous background notes, trying to save as much of the principal notes as possible, somewhat in the manner in which an automobile is stripped to a minimum weight for racing purposes. As the downward price trend continues, the principal notes eventually depreciate, and the match becomes more and more a caricature of the original fragrance than a simulation.

The buyer's price demands on one hand and the enforced depreciation of the match on the other become a pair of millstones between which the perfumer is squeezed. But the inescapable fact is that, in spite of the criticism that may be heaped on the perfumer, the customer is going to get exactly what he is willing to pay for.

In actual practice matching resolves itself into the identification of enough of the top, middle and bottom parts of a fragrance to set up a pattern that will have a resemblance to the product being matched. Having established this skeleton pattern, the perfumer fills in the background and gaps from his past experience and artistic judgment. The result is a fragrance which has a reasonable similarity to the one being matched within the limits of technical and cost restrictions.

There are certain points concerning matchwork that should be clearly understood to avoid misconceptions and friction. At its best, matching is one man's impression of another's creation. A "perfect" match just doesn't exist. No matter how much he tries, the perfumer can never capture every nuance; he must be content with a reasonable degree of accuracy. Just when he has achieved this degree of accuracy is determined by time, economic factors, and more often a simple exhaustion of ideas.

A match represents a "tailored" composition. Merely because it appeals to one individual, there is no assurance that it will appeal to anyone else. Very frequently considerable adjustment is required before



the match will be accepted by another person.

The original fragrance formula as compared with the match formula is quite dissimilar in regard to the various aromatic chemicals used. If this situation did not exist, it would be impossible to simulate a fragrance on substantially lower price levels.

Matchwork Procedure

The first procedure involved in matchwork is to qualitatively identify some of the individual aromatic materials involved in the construction of the fragrance under consideration for matching. Although the information obtained from this exploratory procedure is not spectacular, it often has an important bearing on the subsequent work done.

The next procedure involves the selection of the perfumer's classification group which best represents the major part of the fragrance. This step is highly important as it determines the general construction of the match's skeleton formula. The "fill-in" or "bodying" of this skeleton formula to produce the completed match is absolutely dependent on the perfumer's command of his odor memory for aromatic materials and his ingenuity in employing it.

Although the mechanism of matchwork is simpler than that of creative perfumery, it is far from easy to obtain a good match, because there are so many chemical, artistic and personal variables involved. In an average match, much of the physical effort expended involves the "bodying" of the skeleton formula. Successful results depend upon the personal ingenuity of the perfumer, shrewd guesswork, and a substantial measure of luck.

There is perhaps even more theorizing about the technique of matchwork than of creative perfumery, but rather than engage in any lengthy theoretical discussion, the matching of a Crepe de Chine fragrance will be illustrated.

Exploratory Phase. Examination by "dry-out" is the first step in the exploratory phase. A perfumer's test blotter is carefully dipped in the Crepe de Chine fragrance oil of the to a depth of about ¼" and then quickly withdrawn. It is mounted vertically in a clamp so that it can drain downward and allowed to stand untouched for about 3 hours.

The objective of this "dry-out" is to force the breakup or "unbalancing" of the fragrance oil by a physical, fractional separation. By the process of selective absorption. the more volatile materials and those with the lowest viscosity will tend to remain on the top of the blotter. Those materials with less volatility and higher viscosity will tend to distribute

themselves towards the bottom of the oil saturation as it spreads downward on the test blotter.

In this "dry-out" the esters and volatile essential oils (e. g.: Bergamot and other citrus oils) tend to accumulate at the top of the test blotter. At the bottom are the resins, Nitro Musks, Vanillin, Coumarin etc. In between the two areas there is considerable overlapping, with top materials extending downward into this middle section, and materials from the bottom section occasionally showing up. In spite of this overlapping, the central section of this test blotter often unexpectedly shows up one or more materials that do not appear in either top or bottom. Ylang frequently shows up in the center portion of the test blotter, for example. Ionones and Hydroxycitronellal are other illustrations.

When the 3 hour draining period has expired, the saturated portion of the test blotter is carefully cut into 3 equal parts, representing the top, central, and bottom of this section. Each of these parts is then separately examined by holding it in a pair of tweezers, under the nose. The top cut will show some of the lighter aromatics. The bottom will show the heavier items such as the "powdery" materials, musks and fixatives. The central cut overlaps top and bottom, but does occasionally show something distinctive.

This blotter "dry-out" procedure was applied to the Crepe de Chine sample oil previously indicated. After the 3 hour "dry-out" the three cuts were made. The top cut showed possibilities of bergamot and benzyl acetate, with linalool and linalyl acetate. The middle cut was rather cloudy as to information. Both ionone and methyl ionone seemed to appear, in conjunction with hydroxycitronellal. There was also a suspicion of cardamon oil. The bottom was most informative. It clearly demonstrated the presence of all the nitro musks, musk ketone and musk xylol predominating. Coumarin and vanillin were in the background. Oak moss was obvious through all cuts, but particularly in the bottom. Aldehyde C-11 was very apparent, but in the bottom cut there was an appearance of what seemed to be aldehyde C-12 MNA.

From this "dry-out" operation the following olfactory evidence has been deduced:

Bergamot, linalool, linalyl acetate are present. The fact that they have remained clearly in the top cut after three hours, shows that they must play a substantial part in the formula construction. The presence of these citrus-like materials is commonplace in this type of composition, since Crepe de Chine is basically a Chypre plus aldehydes and "dress-ups." Chypre uses a large proportion of citrus character.

The identification of benzyl acetate is valuable. It shows that the designer has incorporated jasmin notes in his work, and is probably employing the benzyl acetate to give a flowery, sweet "lift" in harmony with his design.

The inconspicuousness of the ionones in the middle cuts indicates that these materials do not play too great a role in the fragrance design. It was difficult to estimate whether a mixture of Alpha Ionone and a good Methyl Ionone were used, or whether an ultra-refined fraction of Methyl Ionone Gamma was used. The decision that the first two were used was reached by a consideration of the price of the matching fragrance. Its price was such that the use of the expensive special methyl ionone was doubtful. The best bit of information from the middle cut was the possibility of cardamon oil. This material presents many faces in association with other aromatics, so that its identification is not easy.

In the bottom cut the presence of musk ketone and Musk xylol is normal for a Crepe de Chine effect. The appearance of musk ambrette suggests that it was brought in through an amber specialty composition. The recognition of coumarin and vanillin in the background tends strongly to confirm this. The best information in this bottom cut was the recognition of the coumarin and vanillin, confirming the amber possibility, and of the secondary aldehyde, the aldehyde C-12 MNA. The observation of the latter was a bit of good luck, since because of their intensity, a mixture of Aldehydes is difficult to identify separately.

So far, a physical method has been used to produce an unbalancing or "break-up" of the fragrance oil being matched. The next move is a chemical trick to produce another kind of unbalancing to give another viewpoint of the fragrance composition, qualitatively. For this purpose phthalation is used.

About one gram of the fragrance oil in question is heated with an equal weight of pure phthalic anhydride on a hot water bath for an hour. The phthalic anhydride esterifies the alcohols (phenylethyl alcohol, citronellol, geraniol, rhodinol etc.) that are present, and also the phenols (eugenol, isoeugenol, etc.). Phthalic esters are odorless, so these aromatics are removed from activity to permit another view of the fragrance oil composition. When the heating is finished, a test blotter is dipped into the melt, and smelled in its fresh state. A "dry-out" is not useful at this point, since the phthalic esters disturb the mechanism of selective absorption. This processing applied to the match sample confirms the present of two ionones more clearly. Orange oil and the possibility of petitgrain oil (both previously unspotted) seem to appear. The existence of a rose composition is suspected by the complete absence of Rose sweetness in the processed sample when compared with the original.

The objective of the next step is to determine which of the perfumer's group classifications (Rose-Lilac - Jasmin - Muguet - Violet - Lavender, Fourgere Chypre) are employed in the construction of the original fragrance.

A casual examination of the original sample, in its bottle shows that it is actually a Crepe de Chine as it is labelled. The obvious Chypre character, coupled

(*Continued on page 824*)

Packaging and Selling

An Aerosol Foot Powder

has been introduced by the Family Products Department of Chas. Pfizer & Co., Inc. Tradenamed EEZ, the foot preparation contains a fungicide, a bactericide, and a germicide, combined with a skin-softening agent and a skin lubricant. This combination introduces a new approach to foot care, according to Dean Thacker, marketing manager of the Family Products Department.

Owens-Illinois Assures You A Complete Packaging Approach

Co-ordinated Research

Pure research into fabrication of glass, *packaging research* into processing and handling methods in customer plants, *market research* into consumer attitudes. All add up to greater packaging value.

Engineered Design

At Owens-Illinois, your package's *three* needs are taken into account: 1) Considerations of its function in the retail store, 2) its operating efficiency, and 3) its consumer utility.

The Right Container

Versatility of facilities and talents make O-I your best source of supply. In container development—beauty, utility, tradition are blended in the right proportions for your product's needs.

The Right Closure

Through long and continuing research O-I has developed the most advanced metal and plastic closures. Helping you choose the right closure is another function of O-I's packaging service.

Needed Fitments

O-I specialists are keenly aware of sales benefits derived from plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.

Merchandising Cartons

Modern cartons developed to serve you efficiently in the retail store and warehouse . . . as well as on your own filling line and in transit. This is the new open-ized carton with easy-open flaps.

Top your package with eye-catching *"special effects"* colored plastic closures

THESE STRIKING CLOSURES add brilliance to your package . . . help make it a real standout.

Added to their beauty are durability and resistance to most chemicals . . . making them ideal for almost every product.

"Special effects" closures are available in a wide range of solid or multi-colors. They're another part of the Owens-Illinois complete packaging service—the right container . . . attractive label design . . . special fitments . . . and merchandising cartons.

Your Owens-Illinois representative can give you full information of "special effects" and other closures, and the entire O-I packaging service. Make it a point to call him now.

METAL AND PLASTIC CLOSURES
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FOR PRESSURE CANS

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FOLLOW THE LEADERS TO CANCO

More shaving lather is sold in Canco pressure cans than in all other makes combined. Naturally, there are good reasons for this success!

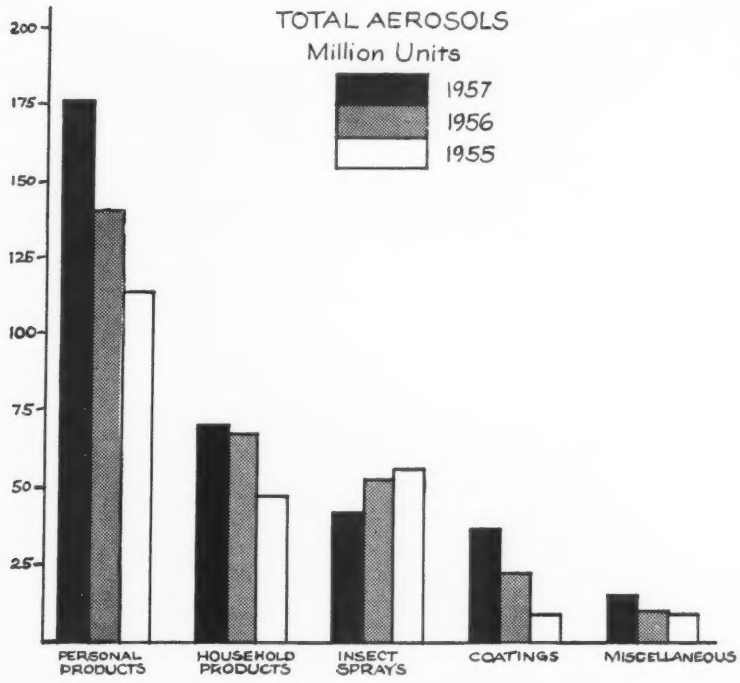
Canco makes a full line of *guaranteed* pressure cans, in seven sizes—with standard one-inch cup openings or individually styled tops. To give you a round-the-can label design, Canco has developed the first commercial coated side-seam.

Canco also offers experienced help from technical service experts and other specialists. Even the Canco oval works for you! Through its top-rated CBS-TV show, DOUGLAS EDWARDS WITH THE NEWS, Canco helps boost sales of aerosols in Canco cans. So—for *any* pressure product, take the leaders' tip and come to Canco first!

AMERICAN CAN COMPANY

Just Printed! Colorful folder on Canco products and services in the aerosol field. For a free copy write to American Can Company, 100 Park Ave., New York 17, N.Y.

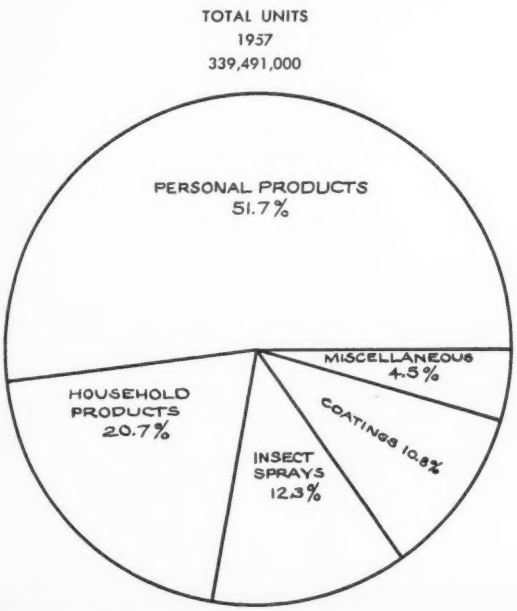
AEROSOL STATISTICS

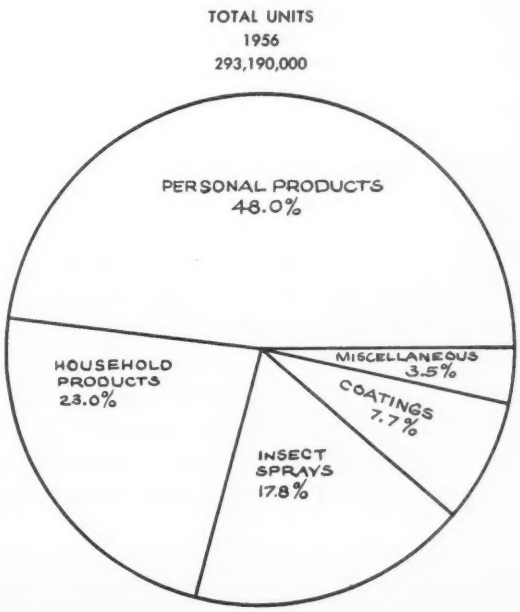


More than ever, aerosol pressure packs can be identified with cosmetic and drug products. In a survey released at the mid-year meeting of the Chemical Specialties Manufacturers Association, the association's Aerosol Division pointed out that output increased by 22 per cent from 1956, continuing the trend of recent years. Tabulated figures for 1957 re-

Non-food Pressure Packs

	Thousands of Units				
	1957	% Change	1956	% Change	1955
Personal Products	175,583	+ 25.0	140,382	+ 22.2	114,854
Household Products	70,137	+ 3.8	67,650	+ 43.5	47,105
Insect Sprays	41,608	— 20.4	52,246	— 6.6	55,975
Coatings	36,528	+ 62.0	22,557	+143.9	9,247
Miscellaneous	15,636		10,354		9,602
Total	339,491	+ 15.9	293,190	+ 23.8	236,784





With Bernardin · Quality is a **SERIES** of satisfactions

THE LINER STORY

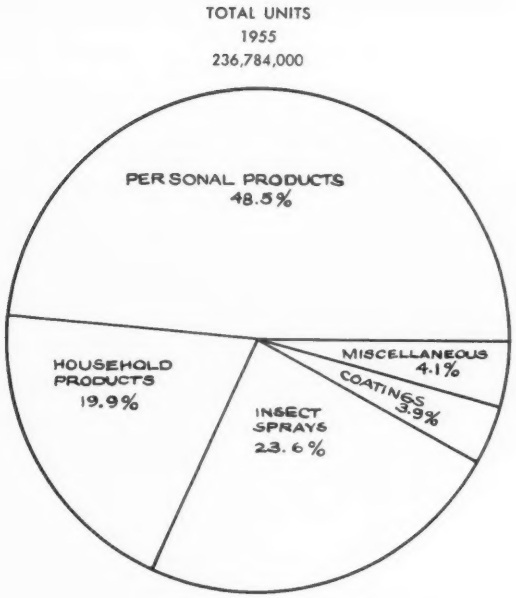
The liner of a closure must *live with* the product it is helping to seal through months or possibly years. It must fit freely yet securely, and be free of any imperfections in the backing or facing material.

Because so much depends on the liner, it must be under constant scrutiny through each of many inspections until it is an integral part of the closure.

You see here, a liner being studied after a series of tests. Around the liner, as around *each* step in Bernardin production, both automatic and manual controls guard the quality of that step to insure quality in each different function from capping line to the consumer's ultimate possession. That is why Bernardin follows its exacting manufacturing process—to insure Quality that provides a whole *series* of satisfactions.

QUALITY METAL AND PLASTIC CLOSURES BY **BERNARDIN**

Bernardin Bottle Cap Co., Evansville, Ind.

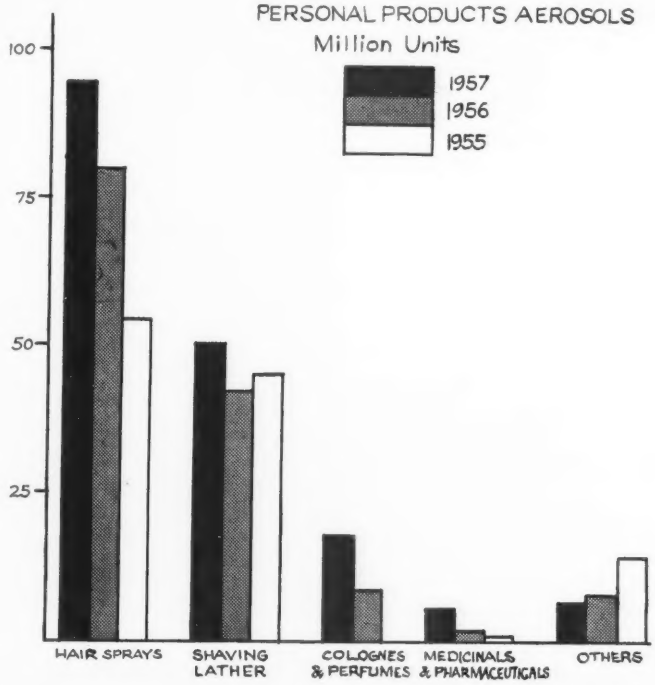


veal a 1957 production total of 339,491,000 units of non-food aerosols, increased to 390,000,000 when adjusted to include non-reporting companies.

Of the reported figures, Personal Products accounted for 175,583,000 units, 51.7 per cent of the total; next were Household Products, 70,137,000 units or 20.7 per cent; Insect Sprays accounted for 12.3 per cent of the total with 41,608,000 units with Coatings at 10.8 per cent or 36,528,000 units.

In these major categories, Personal Products increased by 25.0 per cent from the 140,382,000 units in 1956 which in turn represented a 22.2 per cent increase from the 114,854,000 units in 1955. Household products were 3.8 per cent ahead of the 67,650,000 units in 1956. The increase was 43.5 per cent over the 47,105,000 units in 1955. Insect Sprays declined in 1957 by 20.4 per cent from the 52,246,000 units in 1956 and again by 6.6 per cent from the 55,975,000 units in 1955. Coatings have been steadily moving up, by 62.0 per cent from 22,557,000 in 1956 and from 9,247,000 in 1955.

(*Continued on page 808*)



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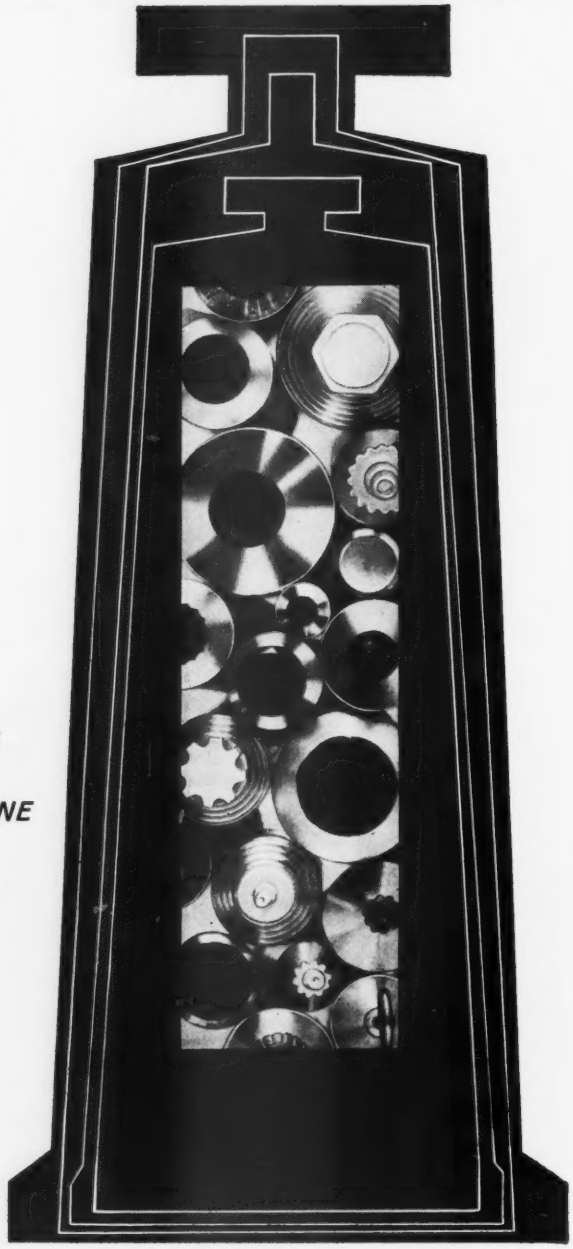


STOP PRODUCT WASTE—USE METAL TUBES!

CIBA'S OVER-THE-COUNTER PACKAGES

A few ideas for adding product messages such as "Poison Ivy" and "Insect Bites" to Antivy bottles are discussed by Ciba design coordinator Jack Marmaras, left, and John Prudden of sales promotion. Simulated drug store shelf is used to visualize appearance of Ciba non-prescription packages among various competitive items.

Can a prescription-drug manufacturing firm package its over-the-counter products so as to achieve point-of-purchase appeal and still maintain the firm's identification? This question was posed for Ciba Pharmaceutical Products Inc. early in 1956 when it undertook to develop a package design which might compete more effectively with other non-prescription products on druggists' shelves.

Convinced that the corporate-image concept was particularly applicable to drug manufacturers, Ciba had, about four years earlier, adopted an integrated design program. All visual material—letterheads and office forms as well as packaging and advertising, for example—were being designed so as to reflect a unified corporate personality. In addition to having consumer appeal, it was essential that the new packaging have visual elements which would tend to project the Ciba image.

A committee, headed by T. F. Davies Haines, president of Ciba, was formed and included the chiefs of sales, market research, graphics, methods and package development, advertising and sales promotion. After a series of meetings, a basic design for Ciba's over-the-counter products was chosen.

This is a white background with red and blue elements. (Variations in prescription package colors are also standard: buff and green; maroon and buff; blue and buff.) A Swiss Gothic type face which has become so identified with the company that it is sometimes referred to as "the Ciba face" is used for the non-prescription product name and is the largest-size type. Next in type size is the reverse logotype of the firm name which is perpendicular to the product name. The other major typographical element describes the product's use.

While subtle differences in color and type size and different package shapes distinguish products, a uniformity of style and appearance tends to evoke a feeling of prestige and dependability. And though played in a lower key—or perhaps because of it—the packages are esthetically satisfying and appealing to the eye.

Development of new product dispensers for counter use in drug stores is discussed by production, advertising and sales executives at Ciba. Larry Zahn, manager of methods and package development, demonstrates to Ron Blaha, assistant manager of packaging operations in production, the fast and simple removal of nasal spray package from new Pyribenzamine Compound with Privine dispenser now on display in drug stores throughout the country. In background, sales promotion manager Howard Bilden, left, and graphics director James K. Fogleman discuss some packaging ideas for Ciba's new Privine display for fall promotion campaign.

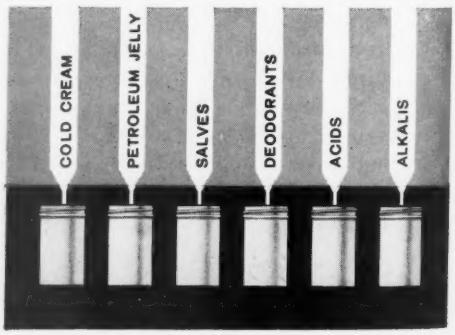
CELANESE FORTIFLEX MAKES POSSIBLE A

A Word About Celanese Fortiflex . . .

Fortiflex is a linear type polyolefin with a specific gravity less than water. Its rigidity combined with toughness makes possible a host of packaging applications—from thinwall blown bottles and injection molded jars to transparent film for bags and wraps. Its heat resistance and resistance to chemical attack mean that Fortiflex containers can be subjected to post-packaging sterilization, and can be used for packaging many chemically reactive liquids, semi-solids and solids. Fortiflex has the sanction of the Food and Drug Administration.

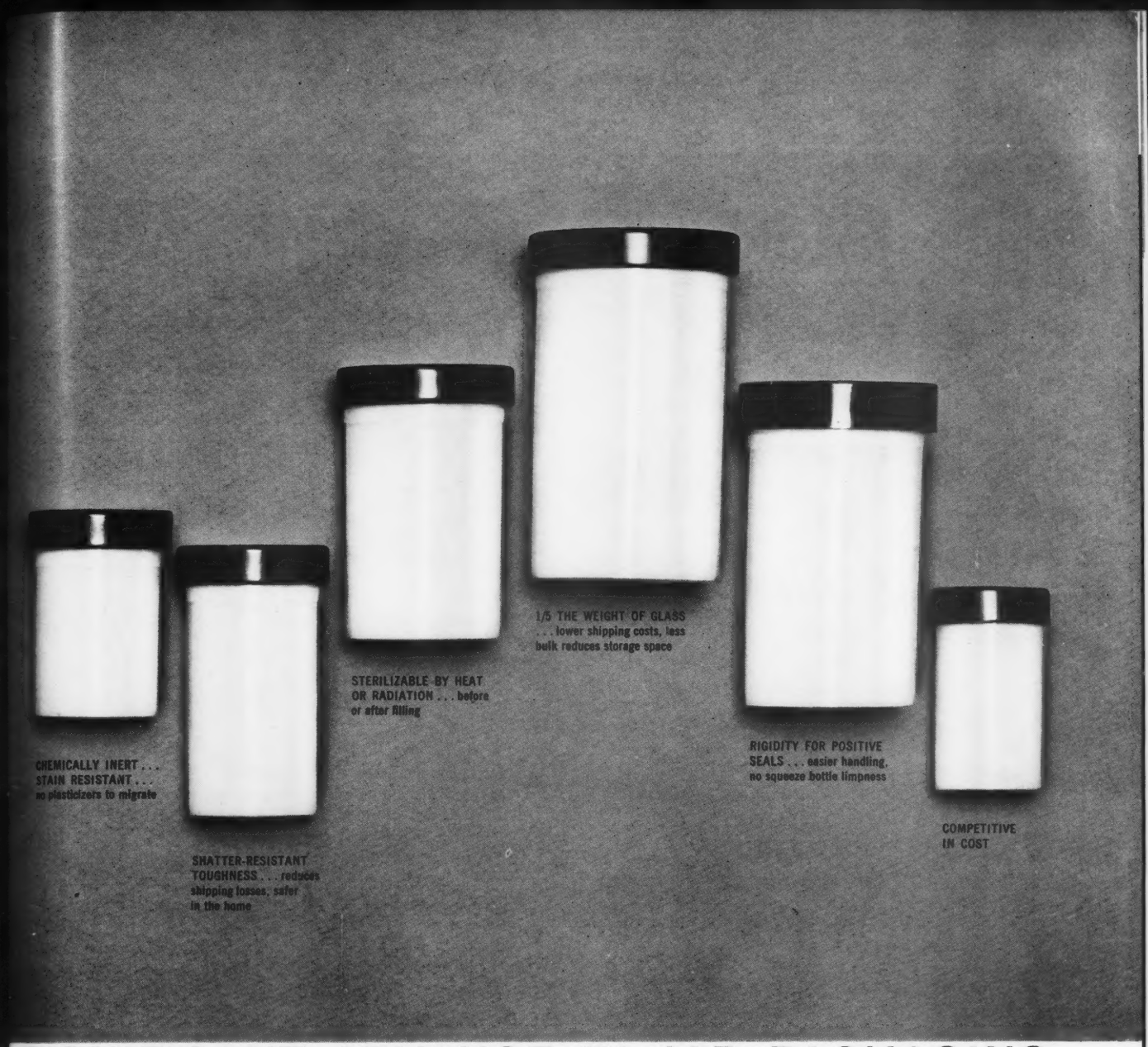
If you have a packaging problem that calls for something special in a packaging material, write to: Celanese Corporation of America, Plastics Division, Dept. 198-F, 744 Broad Street, Newark 2, N. J. Canadian Affiliate: Canadian Chemical Co., Limited, Montreal, Toronto, Vancouver. Export Sales: Amcel Co., Inc., and Pan Amcel Co., Inc., 180 Madison Avenue, New York 16, N. Y.

Celanese® Fortiflex®



A THOUSAND PACKAGING POSSIBILITIES

Celanese Fortiflex is basically a simple polymer of ethylene. However, its ordered molecular arrangement provides the combination of rigidity, toughness, and chemical and heat resistance needed for almost any type of container packaging.



SIGNIFICANT ADVANCE IN JAR PACKAGING

Lermer Plastics, Incorporated offers immediate shipment on a complete line of Poly-Opal drug, cosmetic and ointment jars in the popular slim line shape

Taking advantage of the unique properties of Celanese Fortiflex, Lermer Plastics, Incorporated have developed a line of rigid-type containers that promise to revolutionize the packaging of drugs, cosmetics, chemical specialties and other products. Called Poly-Opal, the jars now in production are made in six sizes—from ½ oz. to 4 oz. They are designed for standard threaded closures, and can be hermetically sealed with cellulose type seals.

Poly-Opal jars are also available in a full range of colors. Other special shapes, sizes and colors can be created for exclusive use of industrial users.

For more information about Poly-Opal Fortiflex plastic jars, you are invited to get in touch with Lermer Plastics, Incorporated, Garwood, N. J. Address your inquiry to Dept. CF500 for prompt response.

Fortiflex...a Celanese linear polyolefin

Packaging and Selling

Lentheric

Interesting things are happening at Lentheric. This long established perfume company has apparently rounded out a complete cycle of business thinking.

Under Squibb management and particularly under the Senior Theodore Weicker, Lentheric conducted its operations in the true classical tradition of perfume merchandising. Distribution was held to a rigid pattern of those selected retailers who had established a favorable store environment for perfume display, stores which had proven ability to sell perfumes and had established a perfume clientele in their community. This pattern was held rigidly even though, at this time under Squibb management, the parent company had several thousand participating druggists in the Squibb plan who considered themselves partners and stockholders in the Squibb company and therefore in Lentheric.

As time went on and with the passing of the early management, Lentheric broadened its scope in distribution and in a multiple of odors, sizes and products.

Lentheric's business volume, which may have reached $10,000,000, reached its peak in volume, prestige and stability three or four years before Squibb was taken over in merger by Olin-Mathieson.

Under the ownership of this enormous chemical company and under new management, Lentheric was put into a period of exuberant expansion. The demonstration system in department stores was tossed out, all bars were down in controlling distribution, wholesale druggists were added to broaden distribution and reliance for business expansion was based promarily upon heavy national advertising, primarily in radio and television.

In January, 1957 Helene Curtis acquired Lentheric and promptly moved it to Chicago. The first plans of Helene Curtis indicated an increasing tempo of exuberance into forcing Lentheric into mass distribution. Promotions galore tumbled head and shoulders over each other, gimmicks and gadgets competed for attention and the key note to advertising was such things as color pages in Life Magazine.

Now it would appear Lentheric has suddenly gone sedate and respectable. A new look has emerged. Fashion, style and glamour are going to be stressed. The company is reaching for new heights and increasing their prestige.

As part of this new way of thinking, demonstrations in key department stores across the country will be re-established. A new perfume training program will be established. There will be monthly bulletins, manuals and special training material for store's sales people. At least four major fashion promotions will be held each year. Throughout the year advertising on all Lentheric fragrances is planned that includes Tweed, Adams' Rib, Miracle, Dark Brilliance, Shanghai and Red Lilac. This new advertising, not yet announced in what media, will also emphasize fashion.

Going to College

Mennen is going to the college campuses in promoting their men's products.

Over 1,000 marketing and advertising professors have been contacted in a contest among students for preparing a Mennen ad.

Quite a number of cosmetic companies have spent quite a bit of time and money on the campus with women students. Promotion managers of men's toiletries have very largely past up this large and influential population group with plenty of money to spend for men's toiletries.

Cosmetics on Television

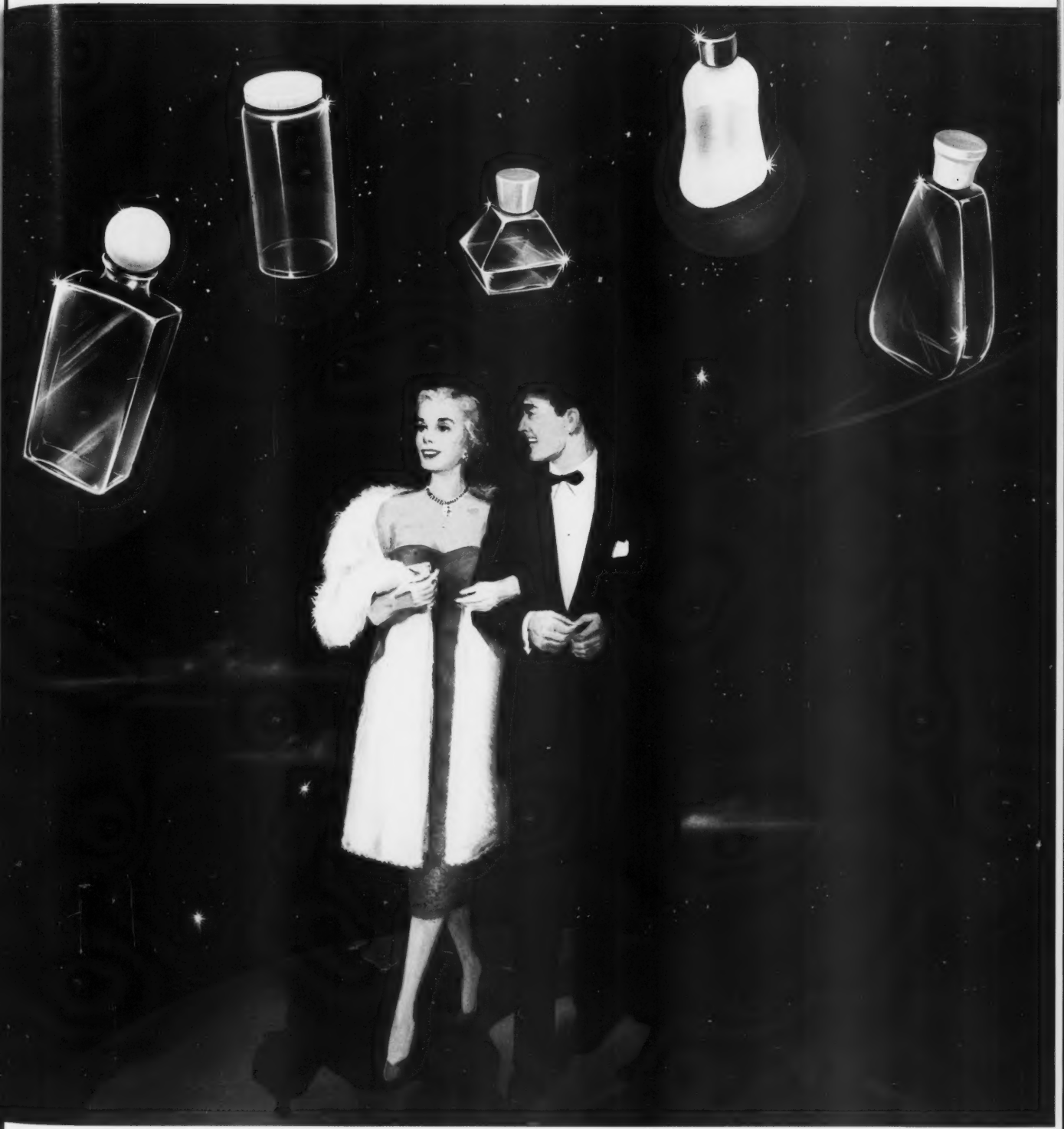
Television has posed an exciting challenge for the cosmetic industry. The reason for this is that cosmetics are basically demonstrated products and television, for the first time, gave the opportunity of taking the human living demonstrator from behind the retail counter in a department store and putting her into the public's home.

Television started out with pretty much of a bang in this industry. The first stimulating success was, of course, Hazel Bishop with their provocative claim of indelibility for a lipstick.

But the dramatic and cyclonic television program that really bowled the cosmetic industry off their feet and had most of the big companies nearly jibbering in their hysterical haste to pursue this same primrose path was, of course, Revlon's $64,000 Question.

Following this momentus television show almost everyone who had a dime plunged with wild enthusiasm into television. The great big companies had the spectaculars, the medium size companies bought the shows and the little companies scrambled around picking up spots here and there, often simply because there was a fantastic bargain rate and sometimes

...glamour in glass!



Out-of-this-world beauty for Mr. and Milady

In gleaming, snowy opal, or crystal flint, H-A *Private Mold* Containers are imagination in glass—and practical, too. At domestic prices, they add the glamorous prestige of more expensive imports to your men's and women's products. And permanent "Deco-fired" labels can be economically applied at the time of manufacture. *Give your products a very special appeal* — call or write H-A, right now.

HAZEL-ATLAS GLASS division of CONTINENTAL CAN COMPANY

WHEELING WEST VIRGINIA

For colorful, durable squeeze bottles

choose a Du Pont **ALATHON®**
POLYETHYLENE RESIN

Attractive, squeeze bottles of Du Pont ALATHON polyethylene resin give your product extra sales appeal! Containers of ALATHON are lightweight and unbreakable... cut replacement costs of damaged merchandise ... keep liquids, creams or powders fresh and sanitary.

ALATHON is tasteless, odorless and non-toxic, inert to most chemicals, and has attractive impermeability characteristics. And its chemical and physical properties won't change with age. That means long shelf life! (Squeeze bottle shown is molded for Seaforth Division, Prince Matchabelli, Inc., N. Y., by Continental Can Company, Chicago, Ill.)

There are a variety of different ALATHON polyethylene resins, each tailored for specific needs. Consult with your supplier about selecting the ALATHON that best meets your requirements. Or write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 116, Wilmington 98, Delaware. In Canada: Du Pont Company of Canada (1956) Limited, P. O. 660, Montreal, Quebec.

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
... *THROUGH CHEMISTRY*

emerging as the proud possessor of television advertising with a total annual appropriation as low as $10,000.

To an extent yet to be determined, the bloom is off the rose, the hysteria is cooling down and here and there can be seen a sour twist to a cosmetic manager's mouth.

One of the very first to bite the dust in television was the one who started all this row. To use his own inimitable words as reported by Advertising Age from Mr. Spector's reported talk to stockholders. "Mr. Spector said more than $5,000,000 was spent for advertising in 1955 and '56—purchases, that I, as an advertising man, would not ordinarily give you $1,000,000 for. The TV buys, he said, included NBC's color spectaculars—which proved disastrous—other TV shows which the company was forced to live with because of its inability to get Class A time periods."

In the 1955 annual report of Lehm & Fink Mr. Edward Plaut, president, after glancing at the net profits of the cosmetic division for this year, had some very sour remarks to make concerning their adventures with television.

Max Factor, who quite suddenly bounced their advertising agency and who has been experimenting with new ways to select an agency, ran through a series of programs last year which reports in the television press indicate were very mixed up in their results with somewhat unhappy experiences.

Although Max Factor's annual statement showed a substantial increase in sales, the cost of these sales indicate a substantial decline in the productive value of the increasing advertising appropriation.

Coty also have had unhappy experiences with television about which they talk very little. Their new advertising program just announced for this year is confined to those traditional magazines historically favored by the cosmetic industry.

Rubinstein is one of the late comers to television and this year came to the support of Sid Caesar and Imogene Coca. Just why one of the leaders in the style and fashion branch of the cosmetic industry felt they were improving their company and product image by such intimate association with a comedy team was rather difficult to guess. At any rate reports in a leading daily newspaper have just indicated the closing out of this program by Rubinstein which, of course, means bowing out on an advertising failure.

Shulton has been one of the successful users of spot. However, we note in their annual statement this following sorrowful remark. "During the latter period (that is, the last quarter of 1957) sales were 5,694,805 in comparison with 5,697,057 for the same period last year. Earnings were 177,612 compared with 479,865 for the first quarter of 1957. High advertising costs due to the weekly "Eve Arden" TV show increased our expenses substantially during this period as compared with those for a year earlier.

Breck is still in the midst of their adventure with Shirley Temple. Since Shirley Temple has decisively and emphatically refused to endorse Breck products on the program or to cooperate in any commercial way, since there is still some question as to what kind of audience these fairy shows are securing and particularly since there is some wonder as to the division of the popularity and public awareness between the name Shirley Temple and the name Breck, it can be said that this program is still suspended in mid air from an advertising success viewpoint.

Seventeen

"Beauty Habits and Product Preferences of Young Women Under 20." This is the title of a brochure by Seventeen Magazine's research department.

This is a panel survey covering cosmetic habits and brand preferences for this age group.

Two in One

From time to time we run across a product of the 2 in 1 type. Sometimes these are gimmicks and sometimes there is a substance of value in this combination.

It looks to us as if the new 2 in 1 "Tact Core Stick" has an interesting functional effect. In this product there is a core of anti-perspirant cream surrounded with an outer ring of a cologne-base deodorant.

Tact will appear under the Seaforth label for men and the Matchabelli label for women.

How To Pick An Advertising Agency

This winter season has seen the all time record in advertising agency switching. Among the migrants of this industry, Max Factor seems to be making the choice of the new agency a project of major proportions.

Over 33 advertising agencies are said to be scrambling for the $3 to $4 million Factor account that is now on the loose.

Nelson Gross, Director of American Advertising, after eliminating a number of agencies on the basis of size or product conflict and finally getting down to the bedrock of 33 agencies, has submitted to these chosen few an information please quiz of 73 questions.

As we have heard, these questions are divided as follows: on agency management, 24 questions; on ability, only 9 questions; on market research facilities and experience, 9 questions; on media selection and administration, 7 questions; on merchandising 5 questions; and, on television, 4 questions.

With a week or so to go to press, we may be able to announce the successful contestant among these quiz kids.

So far, nobody has claimed the 5th amendment, but then even an advertising agency will do a lot for $3 or $4 million.

Reduced Package Size

Johnson & Johnson, we hear, are up against a rather unusual problem in packaging. This problem is to convince dealers and the public that its new, smaller packages of Red Cross Improved Bandage contains the same amount of merchandise as the considerably larger boxes they are replacing. Reason for the change: Improved Bandage took up too much valuable shelf and stockroom space.

This industry, and I believe every packaging in-

AEROSOL PACKAGING

can give your sales "steamroller" power!

Here's how General Chemical can help you get started...

If you've been watching the aerosol field, you've seen product after product come out in aerosol form and roll over its competition with irresistible force.

Could *you* market an aerosol that would have similar success?

A qualified "yes"

If your products can be sprayed, brushed on, dusted or daubed, aerosol packaging may well give them that vital "push." And now's the time to get started—while the field is still growing... while consumers still think of aerosols as "new" and exciting.

General Chemical can help you

As the producer of "Genetron" aerosol propellants, General Chemical has the basic knowledge and specialized experience you need to get started. We will be glad to supply market information and technical data. We can tell you about promising new types of aerosol formulations developed in our laboratories. We can tell you about qualified contract fillers—who can take over the entire production job for you, from test market quantities to commercial production.

The fact is, you don't have to invest a cent in special equipment or personnel to get into this profitable market!

These information services of General Chemical are available to you without cost or obligation. Why not take advantage of them now? Just call or write "Genetron" Department, General Chemical Division, Allied Chemical Corporation, 40 Rector Street, New York 6, N. Y.

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

putting the push in America's finest aerosols

genetron®
aerosol propellants

dustry, has had its unpleasant experiences with packages that have created the impression that the public is getting less for its money. This illusion is extremely important as every package designer knows and, in fact, it is very often one of the serious problems of package design to create the illusion of greater size.

We remember years ago when the Arrow-Hart-Hegeman Company in Hartford put out a beautifully designed plastic jar. This company spent a great deal of time and money trying to introduce this plastic jar into cosmetic uses. They finally quit in despair because they could not overcome the obstacle that a 4 ounce plastic jar looked about one-half the size of a 4 ounce opal jar.

A little later the Colt Company thought that they had solved this problem with a double shell plastic jar where the 4 ounce plastic jar equalled the size impression of the opal jar. This, however, was too cumbersome an assembly and too expensive an operation.

Shot-Gun Products

Why doesn't somebody establish some kind of an award for the product that can do the most things all at once.

Surely for such an award Lan-Lay would qualify.

This product is advertised as 10 products in *one* bottle. These products are listed as follows: (1) For extra dry skin when used as a night-cream; (2) Smoothes dry wrinkled lips when used as makeup remover and base; (3) Eliminates dishpan hands when used as a hand lotion; (4) Helps feet stand-up when used as a foot-oil; (5) Helps prevent sun and wind burn when used as a sun-tan lotion; (6) Keeps cuticle soft when used as a manicuring oil; (7) Keeps hair well-groomed when used as a hair dressing; (8) Restores damaged hair when used as a hot oil conditioner; (9) Makes better permanents when used before and after waving; (10) Helps tinting and bleaching when used as hot oil shampoo.

If this is not versatility, then you try to beat it. What this company needs is to have each salesman 10 men in 1.

Home Absence

According to the results of three telephone surveys through 1956 and 1957, the Richmond Times-Dispatch discovered that a lot of women are not staying home. Percentages varied according to the month and according to the time of day but in June, for instance, home absence ran all the way from 39 per cent to 17 per cent.

Of course, this has nothing to do with radio and television advertising.

Pearls and Deodorants

The deodorant has probably had the most dynamic sales growth in the cosmetic business since the hair market began to stabilize. It seems as if nearly everyone in the cosmetic business now has a deodorant. The product comes in every imaginative form and type and kind of package. And now we have a premium.

To promote the sale of its cream deodorant, Bristol-Myers is making a special offer of a string of simulated pearls with each medium-size (7 oz.) jar of Mum. The combination will retail at 63c while the regular package normally sells at 43c. The necklace is visible in a special "see-through" box.

Tough Competition

We think competition in this country is getting to be pretty tough, but a Japanese salesman has just established the international record. Here is a quote from a recent report on Nippisese sales methods. "Japanese women have forced the resignation of a door-to-door salesman despite his 100 per cent sales record.

"They said that when they tried to shut the door in his face, he threatened them with a live, poisonous snake.

"His boss found out about it when the women tried to return the merchandise that had been forced on them."

Glass Facts

Some interesting facts about glass were given in a recent address by Richard L. Cheney, executive director of the Glass Container Manufacturers Institute, Inc. before the New York Society of Security Analysts.

Glass containers and closures became a billion dollar business for the first time in 1957.

For the third straight year U. S. shipments of new glass containers reached an all-time high, a dollar volume of $784,000,000. To this is added some $284,000,000 in closures.

In 1957 the industry shipped 20.2 billion units or 118 bottles or jars for every person in the United States.

Here are some of the advantages of glass given to the financial advisors.

1. The raw materials from which glass is made are both inexpensive and basic and, therefore, provide a very secure material supply. These products are sand, soda ash and limestone.

2. People like glass because there is a feeling of cleanliness and, of course, visibility of the product.

3. Glass containers lend themselves to all sorts of shapes, colors and designs and they add a great deal of sparkle and style to a high-style business.

4. In fact, glass never adds to or takes away from the taste of foods or beverages. This is because of its relative chemical inertness.

5. Glass is permanent. Ancient bottles are picked up from the ocean floor virtually unchanged and a few years ago 18 bottles of beer lost at sea some 250 years ago were washed ashore in England. The beer, safely sealed in glass, was found to be still completely potable.

6. Modern glass containers are adaptable to high speed, low cost operations in factories and in addition, glass can stand a great deal more abuse than is normally believed. Freight claims on foods and beverages in glass averaged only $10.00 per car against much higher cost for some other containers.

The industry is steadily reducing the weight of bottles. The typical pre-war quart bottle weighed

Colonial

CELLOPHANE PACKAGING

adds

SPARKLE

Diamond bright! This best describes the sparkling appearance of Colonial's cellophane package, the wrapper that makes an eye-appealing container for our quality dropper and assembly units.

Glistening Colonial packages are available in other materials too, such as glassine, foils and the Polymer-coated films. Individual wrapping problems are taken in stride.

Let our technicians make free samples to your exact specifications. We have a Special Services Department that will provide precision calibration in silk screening and hot stamping, too. Contact a Colonial representative listed below or write to us directly.

Specialists in Glass or Plastic Droppers and Assemblies for Nearly a Quarter of a Century

Represented by:

CHARLES E. SCHWAB
122 E. 42 St.
New York 17, N. Y.
OXford 7-0760

ALLEN J. GRETSCH
327 LaSalle St.
Chicago 4, Ill.
WAbash 2-1619

HARRY M. GRABER
811 S. 53rd St.
Philadelphia, Pa.
GRanite 6-6311

GABLER & GABLER
435 S. LaCienega Blvd.
Los Angeles 48, Cal.
BRadshaw 2-2995

RICHARDS GLASS COMPANY
102 Atlantic Ave.
Toronto 3, Canada
LEnox 2-3311

COLONIAL APPLICATOR CO.

VINELAND, NEW JERSEY

some 22 to 24 ounces; the same bottle today weighs 15 to 17 ounces. Quart jars that weighed 18 or 20 ounces 25 years ago today weigh 11 to 13 ounces. Today's product weighs less and is much stronger.

Hazel Bishop

The C and C Television Corporation just purchased control of Hazel Bishop, Inc. This marks a new episode in the history of a company that has probably gone through more phases, more cycles, more ups and downs than any other cosmetic company in recent history.

Under the last management, Hazel Bishop started a period of extravagant expansion based upon a very compelling advertising gimmick, that is indelibility. They were the first among the cosmetic companies of their general class, that is excluding toiletries, to use television in a big way and it was due to the initial success of their television program that this industry developed a frenzy to imitate this advertising success. It was Hazel Bishop also that led the way, during this new era of expanding advertising, into expanding distribution all the way down through the grocery store field.

We do not know what the new owners are going to do with Hazel Bishop, but they certainly do have a hat full of problems.

This company has been known for some time now not as a cosmetic company, but a television program. This seems to clinch the definition.

Dandruff

If you are in the advertising business, you are going to have dandruff. At least this is what a 50-city survey by the Curtis Dandruff Treatment Council of New York and Chicago reports.

According to this report, "Executives and junior executives in the fields of advertising, public relations, radio and television, who probably work under the greatest nervous pressure" lead the field, with 95 per cent reported giving special attention to the pesky white flakes.

In conclusion, "We have long suspected that dandruff is closely related to emotional stress."

Thank you Mr. Gidwitz, president of Helene Curtis, for your company's contribution to science.

Drugs & Cosmetics

There certainly is an increasing emphasis by pharmaceutical companies to get into the cosmetic business and by the cosmetic companies to get into the pharmaceutical business. Two new products that interest us very much from the pharmaceutical side is Selsun, a dandruff removing shampoo of Abbott Laboratories, and a new cream which Hoffmann-La Roche will soon put out on the market.

Four interested cosmetic companies have each declared their intention of moving more vigorously into the pharmaceutical field, that is Revlon, Max Factor, Helene Curtis and Shulton. In their recent annual statement, Max Factor stated, "Pharmaceuticals and skin treatment items, are receiving an increasing amount of attention as the Company anticipates a sizable potential expansion in this area."

Of course, these products coming from each branch of the industry can probably be termed either therapeutic cosmetics or cosmetic therapeutics, which ever you want.

Pfizer and Reader Inquiry Cards

Misinterpretation of comments in this department last month on a letter from the Pfizer advertising agency requesting publications to exclude Pfizer's name from reader inquiry cards or other devices for generating inquiries prompts us to clarify the Pfizer attitude.

Such inquiry-stimulating plans are of necessity quite general; the reader simply indicates that he wants product-information material from the company in question. Pfizer cannot know in which of its many chemicals the reader is interested. The firm, therefore, prefers direct inquiries since these are specific.

Tid-Bits

Colored ink or colored paper can give a very beautiful duotone effect for a package or a mailing piece. This process was used for a package stuffer by Tritle Labs. in Seattle for their Glycerine and Rose Water Cream with excellent effect.

Here's something to think about. A leading advertising executive at the recent meeting of the Four A's had this to say: He pointed out that for the top 20 U. S. advertisers it is estimated that 40 per cent of the sales and administration budget goes for advertising and promotion and that for three of the top 20 more is spent on sales and administration than on production—with another two spending 70 per cent to 85 per cent as much on sales and administration as on production.

There will soon appear on supermarket shelves an alarm clock sealed in a tin can. According to the sales manager of the clock company, "We are sealing clocks in cans to make handling easier and more economical for food stores."

This seems to us to open up a vista of unlimited packaging and merchandising opportunities. If you can sell a clock in a tin can, what limitations are there to anything?

Last year there were 1,287 television advertisers whose expenditures in spot programs exceeded $20,000.

Eighty-nine advertisers invested more than $1,000,000 in television.

Food product advertisers were the largest television users.

Color is breaking into the soap field in a real way in Canada where Proctor & Gamble is launching Camay in five colors.

Here's a quote. "Advertising can work only up to a point and then, assuming that the product is right to start with, I think selling has to take over." That's from a Sears, Roebuck executive.

RISDON VALVE QUALITY IS VITAL INSURANCE

The payoff point for all the time and money invested in your aerosol product is at the fingertips of the user. That is where repeat sales are made or lost.

When your customer pushes the actuator, the performance-insuring quality of a Risdon valve becomes vital. And nothing less than Risdon quality gives full assurance of customer-pleasing results over the entire life of the package. An inferior valve can turn out to be your most expensive "bargain".

Risdon quality... performance-proven on many millions of packages... is the result of extensive scientific research and development. It is zealously guarded at every stage of valve manufacture by Risdon's uncompromising quality control.

Most *leading* aerosol packagers keep their success secure by using only Risdon valves to dispense their products.

Contact Risdon for specific information on the valve for your product.

Write For Free Booklets On RISDON Valves

FOR Pressurized Products Packaged in Glass, Metal or Plastic Containers.

DISPENSING Conventional Aerosols, 3-Phase Products, Alcohol Base Products, Water-Base Products, Foam Products, Powder Sprays, Metered Sprays, Ultra-Low Pressure Applications, Products Containing Propellent Emulsions or Dispersions, etc.

RISDON

THE RISDON MANUFACTURING CO.

Valve Division • Naugatuck, Conn.

RI-103

News in Packaging . . .

High-Density Plastic Bottle An Ideal Package, Says Breck

The new high-density plastic bottle being used by John H. Breck Inc. for its professional size Banish Dandruff Treatment Shampoo has proved to be an ideal package, according to Edward J. Breck, president of the firm. The new container is supplied by the Plax Corp. and is fabricated from Hi-Fax, a product of Hercules Powder Co.

Studies conducted by his laboratory and technical staffs, said Mr. Breck, indicated that, when used as a container for Banish, the new plastic bottle was compatible to the product, had high permeation resistance and guaranteed more than two years of shelf life.

The package permits three color offset printing, Mr. Breck pointed out and his firm is using its traditional red, black and gold label. He said that his company was able to obtain the bottle in white which gave a desired pharmaceutical appearance and, in addition, the use of white made the package unlike any other currently used for such preparations in the beauty or barber shop field.

The plastic bottle affords considerable savings on freight and handling and storage costs, Mr. Breck said, and can be used on the firm's existing production lines at speeds comparable to other types of containers.

To achieve greater capacity, efficiency and major economies, Aerosol Techniques, Inc., Bridgeport, Conn., and Western Filling Corporation, Los Angeles, have coordinated their production and research facilities. John L. Marana, left, president of Western Filling, and H. R. Shepherd, president of Aerosol Techniques, make it a smiling handshake after formalizing the collaborative agreement.

Lipstick-Case-Size Aerosol For Perfumes Is Introduced

A refillable aerosol dispenser that holds 250-300 measured applications of fragrance, in a highly decorative container measuring two and seven-eighths inches in length and three-quarters of an inch in diameter, has been introduced by the Risdon Manufacturing Co.

The new dispenser, the Mini-Mist, is refilled simply and easily by inserting a new cartridge, which holds about two and a quarter grams of fragrance. The cartridge is made of either stainless steel or aluminum. The use of stainless steel in perfume packaging makes possible an almost inert package, with absolute protection against contamination of any kind, according to an announcement

by the company. The stainless steel tubes are drawn in an eyelet machine so they have no seams which could be the source of corrosion or contamination. In addition, the patented metering valve in the unit is non-metallic, being made of nylon and rubber.

The jewelry-like dispensers will be made for fragrance manufacturers in a wide variety of machine-engraved patterns.

Tubes for Drugs, Cosmetics Rise

Collapsible metal tubes for pharmaceutical products totalled 35,523,792 units during January and February of this year, a 13 per cent increase over the first two months in 1957, according to end-use statistics compiled by the Collapsible Tube Manufacturers Council. Tubes for cosmetic products totalled 12,730,464 units for the two month period, also a 13 per cent increase.

Prell Concentrate shampoo is being packaged in clear plastic tubes manufactured by the Bradley Container Corporation. The tubes are internally coated for retention of aromatic and other essential ingredients. White lettering on the tube contrasts vividly with the product color, green. The transparent tube permits the consumer to see how much of the contents remains after each use.

Maryland Glass, Gulfport Glass Executive Changes

Changes in executive personnel of the Maryland Glass Corporation and the Gulfport Glass Corporation have been announced. Officers of Maryland Glass are:

J. Stanley Heuisler, chairman of the board; Philip I. Heuisler Jr., president and general manager; Louis C. Roche, vice-president in charge of factory operations; Thomas J. Conry, vice-president in charge of sales, H. H. Gritzan Jr., vice-president; George J. Ruppel, treasurer; Robert B. Clark, secretary; O. W. Kahmer, assistant secretary; Thomas H. Jones, sales manager; Phillip I. Heuisler III, assistant sales manager; G. M. Clevenger, plant manager; Donald Shea, assistant plant manager; Charles Whittington, assistant to the president.

Officers of Gulport Glass are:

J. Stanley Heuisler, chairman of the board; Philip I. Heuisler Jr., president; James W. Cloman, vice-president and general manager; James H. Easter, treasurer; Robert B. Clark, secretary; Charles Patterson, assistant secretary.

Safety Snap Cap for Aspirin

A polyethylene safety snap cap which fits tightly enough to make removal by small children difficult and yet can be removed by the average adult without trouble, has been introduced by Plough, Inc., Memphis, Tenn., on the company's St. Joseph Aspirin for Children bottles.

Patent thoughts and trends

BY THOMAS CIFELLI, JR., PATENT ATTORNEY*

Drugs vs. Cosmetics

The drug and cosmetic fields have much in common, of course. So much so that it appears entirely unnecessary even to highlight the common attributes of both fields. Perhaps the most outstanding illustration of the community of these two fields is the very name of this periodical.

Nevertheless, just as no two ideas or objects are exactly alike in all respects (otherwise there would only be one of each) so too with regard to drugs and cosmetics. An outstanding area wherein the two fields differ is that of patents. From time to time these columns have pointed up some of these differences. For that matter, the list of recent patents regularly appended to these columns regularly shows the great preponderance of patents issued in the drug field as compared with those issued in the cosmetics field. Recent technical and legal news, however, have brought these differences into focus again. On the one hand, we see a continuation of the issuance of many patents to drug interests. On the other hand, we note that the most newsworthy item relating to the field of cosmetics is the one involving the bitter legal battle concerning the McDonough hair waving patents.

While it is true that the drug field cannot offer any claim that it is free of patent litigation; nevertheless, it has been the writer's observation that the ratio of patent litigation in the drug field, as compared to the number of patents issued in that field, is much lower than the corresponding ratio in the cosmetics field. Indeed, it almost seems that even in point of actual numbers there is more patent litigation in the cosmetics field than there is in the drug field. There comes to mind, for example, only litigation in the tetracycline (later settled) and vitamin B_{12} on the drug side in recent years, as against hard-fought litigation involving depilatories, anti-perspirants, pressurized shaving cream and hair waving lotions, in the cosmetic domain.

Assuming the correctness of the comparison just made, what is the reason for the situation? The writer does not presume to know the answer. However, it may be partly due to the fact that the drug industry, while extremely competitive, does tend to settle what differences it may have in an amicable matter in the patent area; whereas the cosmetic field is more litigious.

An example of a recent patent issued in the drug field and one example of a recent decision involving litigation on the McDonough hair waving patents follow:

Chromatographic Recovery of Vitamin B_{12}

W. M. Ziegler was granted U. S. Patent 2,830,009 on a process for recovering vitamin B_{12} chromatographically.

Vitamin B_{12} is known to be a cyano - cobalt - amine (cyanocobalamin) complex in which the cobalt is bonded to organic amino substance through co-ordinate valencies of the Werner type. See Science 112 (1950), pages 354-355.

Most commonly, vitamin B_{12} is made available commercially from various fermentation broths; for example, it is found in the fermentation broth formed by the culture of Streptomyces griseus (Rickes et al., Science 108, pages 634-635, December 3, 1948), Streptomyces aureofaciens (Pierce et al., J.A.C.S., vol. 71, page 2952) various flavo bacteria, U. S. Patent 2,515,135, and various other microorganism cultures in media having a minute natural or added cobalt content.

According to the patent the adsorption hereof is effected from natural broth organic solvent extracts containing the vitamin in the relatively concentrated form in which it may have been extracted or further concentrated; or from a solid vitamin B_{12} in a crude or semipurified form from which the original aqueous or organic solvent may have been removed and which is taken up in the solvent hereof in desired concentration for the present chromatographic treatment.

Active (or activated) alumina is a very effective binding agent to absorb vitamin B_{12}, and its modifications as mentioned above, such as hydroxo-cobalt-amine, from many solvents widely variable in structure. The binding or adsorptive strength of such adsorbent is substantially greater as the solvent is anhydrous. Moreover, as practiced in the art, a portion of the vitamin B_{12} may be recovered therefrom by elutriation with anhydrous solvents such as absolute methanol.

According to the method hereof, it is found that advantage may be taken of its strong adsorptive effect to utilize active alumina carefully adjusted in pH in the specific alkaline range of 7 to 9, preferably 7.5 to 8.5 to adsorb all of the vitamin activity from a concentrate homogeneously dissolved in a similarly large group of solvents which either are anhydrous or contain up to 25 per cent of water.

Such column is further conditioned to a dry state with any water miscible dry solvent such as methanol, ethanol, isopropanol, or acetone both before and after adsorption, and may then be developed or elutriated, while the alkaline column is in the carefully controlled pH range, with a solvent containing homogeneously dissolved therein from 20 to 60 per cent or water to move the adsorbate as a distinctly colored band separable into relatively distinct fractions.

These fractions contain not only

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all of the vitamin B_{12}, but also the vitamin B_{12} modifications, such as hydroxo-cobalt-amine, which heretofore were immovably retained in the column. Some soluble impurity is also moved through the column by the aqueous organic elutrient, however, much remains, resulting in the advantages of greatly increased yield in that practically all the vitamin activity is elutriated from the column with more selective fractionation of the vitamin B_{12} and its modifications in substantially purer form. Thus, the present method improves both the yield and the purity. Moreover the present method allows recovery of concentrated select fractions of the vitamin modifications which are convertible by known methods, such as treatment with soluble cyanide, to enhance the overall yield to true vitamin B_{12} from the portion that was heretofore lost in vitamin B_{12} chromatography by remaining immovable in the column by dry solvent development.

Another McDonough Patent in Permanent Waving Field Held Invalid

Over the years these columns have on a number of occasions reported on the patent situation involving the use of thioglycolic acids, etc., in hair waving solutions. Summed up, McDonough finally succeeded in obtaining a rather basic patent U. S. 2,577,710 after a long drawn-out prosecution in the Patent Office. Indeed he had to go to court to obtain his patent. However, in subsequent hotly-contested litigation this patent was invalidated.

There have been a number of purely legal maneuvers involving the McDonough hair waving patent since the basic patent was invalidated in 1954. No attempt has been made to report those maneuvers here because they did not appear to be of a nature suitable for consideration. However, recently the same judge who invalidated U. S. Patent No. 2,577,710 also invalidated McDonough's subsequently-obtained U. S. Patent No. 2,736,323. The judge was asked to decide whether this latter patent (also referred to simply as "323") was invalid for substantially the same reasons that U. S. 2,577,710 (also called "710") was invalid. Because of the nature of the decision it is being reproduced here exactly as published.

I. Validity of the 323 Patent

The validity of 323 is not to be determined as though this were a plenary proceeding. The plaintiffs are limited to showing that 323 is invalid for "substantially the same reasons" that 710 was invalidated, based upon the conclusions of law and findings of fact in the 710 litigation. The master specifically limited himself to a determination of invalidity on this basis.[6] He therefore excluded the issue of fraud in the procurement of the patent as extraneous to the issues adjudicated by the 710 judgment.[7]

The 710 patent was a sub-generic patent laying claim to a vast class of mercaptan compositions used for the permanent waving of human hair. Although the inventor McDonough apparently originally viewed the 710 patent as one for a new composition of matter, i.e., mercaptans,[8] in view of the fact that a prior patent had specifically disclosed and claimed a species of mercaptan,[9] the defendant relied primarily upon the assertion that 710's validity rested upon the discovery that special laws and criteria govern mercaptans in hair waving.[10] The 710 patent was found invalid for, inter alia, non-criticallity in fact, lack of invention over prior art, and indefiniteness in the statement of the claims.

Prior to the issuance of the 710 patent, but more than eight years after its filing date, the inventor filed a divisional application with the Patent Office which eventually issued as the 323 patent. The application claimed a small group of mercaptan compositions which had been disclosed in the specifications of the earlier 710 application. Among the mercaptans included within this smaller class is thioglycolic acid, which is the principal mercaptan used in commercial permanent waving compositions today.

In the Patent Office, the inventor of 323 was required to change the designation of his application from "divisional" to "continuation - in - part" owing to the examiner's contention that new matter had been inserted in the application. At the time, defendant's counsel vigorously disputed the contention that there was any new matter in the 323 application.[11] They now assert, however, that 323 does contain independent invention: the disclosure of "different criterion in the appreciation and selection of particular mercaptans for waving effectiveness,"[12] The master found, however, that "[C]omparison of the 323 patent with its patent, 710, reveals that the specifications of each are, save for minor additions and deletions, identical."[13]

Comparison of the specifications indicates that both contain the same general statement of the invention applied for, and the same teachings with respect to the pH of the mercaptain solutions, concentration, preferred bases and adjustment clause. When 710 referred to a broad class of mercaptans which included some 268 different mercaptans, 323's specifications are limited to a group containing some 46 mercaptans. The principal subject matter of 323, thioglycolic acid, was referred to in 710 under the name of mercapto-acetic acid. There are three examples of the use of thioglycolic acid in the 710 patent, all of which are repeated in 323. The deletions from 710 relate to statements that polar acidic mercaptans—i.e., thioglycolic acid and its homologues, are less effective than other mercaptans.

The principal difference in the specifications relates to the language of the molecular weight instructions.[14] Defendant contends that the

(*Continued on page 830*)

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[6] The issue framed for trial by the master was "Whether the findings of fact upon which the judgments in the 710 action rest require and compel a holding that the 323 patent is invalid."

[7] 1956 Master's Report 25.

[8] See 1954 Master's Report 27-8.

[9] U.S. Patent No. 2,201,929 issued to Speakman on May 21, 1940.

[10] But see note 17 infra.

[11] Plaintiff's Exhibit 79, at page 91.

[12] Defendant's Objections to Master's Report No. 2.

[13] 1956 Master's Report 7.

[14] In 710 the inventor taught that:

"I have also discovered that as the molecular weight increases, the mercaptan becomes less effective as a waving agent, particularly if the increase is due to a polar acid group. For example, beta - amino ethyl mercaptan (molecular weight 77) is far more efficient as a waving agent

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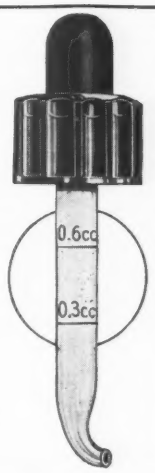

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NEWS...

Name Dr. Leonard Scheele WHO Assembly Hon. Delegate

Among the honorary delegates named to represent the United States at the Tenth Anniversary Commemorative Session of the World Health Organization is Dr. Leonard A. Scheele, president of Warner-Chilcott Laboratories. Dr. Scheele is the only honorary delegate representing the pharmaceutical industry among those named by the Department of State. Honorary delegates are officially accredited as alternate United States delegates in accordance with WHO procedure.

National Drug Co. Pres.

Charles M. McCallister, president of Jensen-Salsbery Laboratories of Kansas City, became president and general manager of The National Drug Company of Philadelphia June 9, according to an announcement by H. S. Richardson, Jr., president of Vick Chemical Company. Both Jensen-Salsbery Laboratories and The National Drug Company are subsidiaries of Vick Chemical Company.

H. R. Marschalk, executive vice-president of Vick and former president of National, will continue as board chairman of National Drug. New president and general manager of Jensen-Salsbery Laboratories is Dr. Vladimir Dvorkovitz, former vice-president and assistant general manager.

DR. FLOYD A. EBERLY

WALTER A. MUNNS

Joins van Ameringen-Haebler

Byron N. Thompson has joined van Ameringen-Haebler, Inc. as technical service representative of the company's aromatic chemical department in New York, according to an announcement by Charles P. Walker, president of the firm.

Prior to joining van Ameringen-Haebler, Mr. Thompson was associated with The Glidden Company, where he was engaged in market research, and sales to the chemical specialty, pharmaceutical and soap industries. Previously he had his own consulting firm, working on the development of surface action compounds for industrial and consumer products.

R. T. PARFET JR.

New Upjohn Vice-Presidents

Dr. Floyd A. Eberly has been elected vice-president and director of development and chemical production of The Upjohn Company. R. T. Parfet Jr. and Preston S. Parish have been elected vice-presidents and administrative assistants. Dr. Eberly, Mr. Parfet and Mrs. Richard Light, granddaughter of Dr. W. E. Upjohn, founder of the company, have been elected to the board of directors. Mr. Parish was elected to the board in 1955.

Munns SKF Pres.; Boyer Chmn.; Kline Hon. Chmn.

Walter A. Munns has been elected president of Smith Kline & French Laboratories, succeeding Francis Boyer, who, reaching the company retirement age of 65 this month, has been elected chairman of the board. C. Mahlon Kline has been elected honorary chairman of the board, a newly created position.

These changes in top management took place May 15 at an organizational meeting of the board of directors at which Thomas M. Rauch was elected vice-president in charge of medical promotion.

Mr. Munns, 55, has been associated with Smith Kline & French since 1929, when he joined the company's medical promotion staff. In 1945 he was named vice-president in charge of medical promotion. In 1950 he was elected to the board of directors. In December, 1956, he was elected executive vice-president and a member of the executive committee.

Mr. Boyer has been president of SKF since 1951 and has been associated with the company since 1919. He was named assistant to the president in 1926 and was elected executive vice-president in 1936.

Mr. Kline, 78, son of Mahlon N. Kline, one of the early partners in the company, joined Smith Kline & French in 1902 as a chemist. He was elected president in 1921 and chairman of the board in 1951.

Schering Sales Editor

James A. Prior has been appointed sales editor for Schering Corporation, by Herman W. Leitzow, vice-president, has announced. Mr. Prior will edit publications for the company's sales staff and prepare various communications.

P. S. PARISH

R. Lincoln McNeil, left, founder of McNeil Laboratories, gives a congratulatory handshake to Dr. Charles E. Vanderkleed, former vice-president and scientific director of McNeil, at a luncheon celebrating Dr. Vanderkleed's eightieth birthday. Looking on are Henry S. McNeil, left, president of the firm, and R. L. McNeil Jr., chairman of the board.

AAGP Honors Kohlstaedt

Kenneth G. Kohlstaedt, M.D., director of Eli Lilly and Company's clinical research division, has received the first certificate of appreciation for meritorious service to be awarded by the American Academy of General Practice.

The award was established by resolution of the A.A.G.P.'s congress of delegates at the tenth annual scientific assembly held recently in Dallas. By unanimous action of the congress, representing 24,000 family physicians who are members of the Academy, this first award was voted to Dr. Kohlstaedt.

He was recommended for the award by the Academy's Indiana chapter "in appreciation for the invaluable service . . . rendered the Academy for a number of years." He is an honorary member of the Indiana chapter.

MS&D Promotes Donahue

Emmet J. Donahue has been appointed assistant to the branch operations director of Merck Sharp & Dohme, according to an announcement by James J. Fee, branch operations director. Mr. Donahue succeeds Frank C. Walsh, who has retired from the company.

Greeff Vice-Presidents

Harry Y. de Schepper and Charles E. Griffith have been elected vice-presidents of R. W. Greeff & Co., Inc. Both have been with the company for over twenty years and are also members of the board of directors.

Kroeger Succeeds Hammer

Arthur P. Kroeger of St. Louis, associate director of marketing for Monsanto Chemical Company's Organic Chemicals Division, has been appointed director of marketing for the division, Charles H. Sommer, Monsanto vice president and general manager of the division, has announced.

Mr. Kroeger succeeds John L. Hammer Jr. of St. Louis who is resigning his position with Monsanto to accept appointment as assistant to the president of Mississippi Lime Company of Alton, Ill.

Mr. Kroeger joined Monsanto in 1929 as a sales representative of its rubber chemicals. He became the division's director of sales in 1953 and was appointed to his present position in 1955.

Prior to joining Monsanto in 1952 as a director of marketing, Mr. Hammer was a vice-president and director of Smith, Kline & French

HIF Officers

Eugene N. Beesley, president of Eli Lilly and Company, has been elected chairman of the board of directors of the Health Information Foundation. He succeeds George F. Smith, president of Johnson and Johnson, who was elected a vice-president of the foundation.

George Bugbee was re-elected president of the foundation. Re-elected as vice presidents are: J. Mark Hiebert, M.D., president of Sterling Drug, Inc.; John G. Searle, president of G. D. Searle and Co.; George Van Gorder, chairman of the board, McKesson and Robbins, Inc.; and Ernest H. Volwiler, president and general manager, Abbott Labs.

Henry S. McNeil, president of McNeil Labs., Inc., was re-elected secretary of the foundation, and S. Barksdale Penick Jr., president of S. B. Penick and Co., was re-elected treasurer.

Organon Promotes Behrman

Robert H. Behrman, formerly professional service representative for Organon Inc. in the St. Louis, Mo. area, has been appointed medical center representative in Organon's hospital sales department. Previously, he was named "Salesman of the Year" (1957) and awarded Organon's annual trip to Holland award for his sales record.

Promote Pyle and Kuryloski

Charles B. Pyle, director of sales and marketing for Merck Sharp & Dohme, has been appointed assistant to the executive vice-president, it has been announced by John G. Bill, president of the division. Eugene L. Kuryloski has been named director of sales and marketing. He was formerly assistant to the director of sales and marketing.

CHARLES B. PYLE

EUGENE L. KURYLOSKI

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Roche Receives Defense Award

Hoffmann-La Roche Inc. has been cited by the Department of Defense for "outstanding cooperation with the Reserve activities of the Armed Forces."

Major General Raymond E. Bell, Commanding General, II U. S. Army Corps (Reserve), presented the award to Robert A. Hardt, executive vice-president of Hoffmann-La Roche, at a ceremony in the plant. Company officials, employees, and distinguished civilians and military guests were present.

The company has effected policies that encourage its employees to actively participate in reserve activities by granting leave in addition to regular vacation periods, and by maintaining life insurance, pension credits, hospitalization and seniority benefits for Reservists on extended active duty. Further, the adjustment of work schedules to permit attendance at weekly meetings and drills has been of inestimable value in aiding employees to meet their training obligations.

Shulton Vice-Presidents

Richard N. Parks has been elected vice-president for sales and David Gregg Jr., vice president-International Division of Shulton, Inc., it has been announced by George L. Schultz, president.

Mr. Parks has served as general sales manager since 1956. He joined Shulton in 1948 to take charge of market research and sales analysis and was appointed manager of the Eastern Division in 1952. Mr. Gregg has served as manager of the International Division since 1956. He joined Shulton in 1950 and was appointed assistant to the president—foreign in 1955.

RICHARD N. PARKS

Dr. Roy A. Bowers, dean of the College of Pharmacy of Rutgers University, looks at oil portrait of himself, which was presented to him at the college's annual convocation awards program by Wyeth Laboratories. Making the presentation is Philip H. Van Itallie, editor of Wyeth's Pulse of Pharmacy. Dr. Bower's portrait appeared recently on the cover of the Wyeth publication as part of a series honoring pharmaceutical school officials.

Pres. of Lanolin Plus

Morton Edell has been elected president of Lanolin Plus, Inc. Products owned and controlled by him have been merged into the Lanolin Plus line. The action is subject to approval by Lanolin Plus stockholders.

Mr. Edell is a former president of Vitamin Corporation of America, and presently distributing "Pink Ice," "Tint 'n Set," "Wash 'n Curl" and other cosmetic and proprietary products.

MORTON EDELL

Teal Is Roche Vitamins Rep.

John C. Teal has been named a salesman for the Vitamin Division of Hoffmann-La Roche Inc., it has been announced by Robert W. Smith, general manager. Mr. Teal, who has been a medical service representative for Roche Laboratories Division since 1953, will represent the Roche Vitamin Division in the central and northern area of the West Coast.

Elect Beyer, Denkewalter Administrative Vice-Pres.

Dr. Karl H. Beyer Jr. and Dr. Robert G. Denkewalter have been elected administrative vice-presidents of the Merck Sharp & Dohme Research Laboratories, it has been announced by Dr. Max Tishler, president of the research laboratories.

In the newly created vice presidential posts, Dr. Beyer and Dr. Denkewalter will share over-all administrative responsibility, under Dr. Tishler, for the organization's research programs and its staff of more than a thousand persons.

Dr. Beyer, as administrative vice-president for the life sciences, will administer the company's research programs in biological, virological, medical, and animal sciences. Dr. Denkewalter, as administrative vice-president for the physical sciences, will administer the programs in fundamental, developmental, and industrial research.

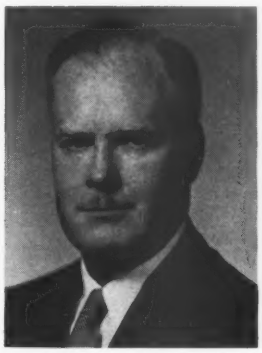
Dr. Tishler also announced that Dr. Karl Pfister III has been appointed executive director for developmental research, succeeding Dr. Denkewalter, and Dr. Harry J. Robinson has been appointed executive director for biological research.

Fragrance Foundation Moves

The Fragrance Foundation has moved into offices at 150 East 42nd Street, New York 17. Telephone: YUkon 6-9177.

Teegarden Is Promoted

Robert W. Teegarden has been promoted to general manager of the Union Beach unit of van Ameringen-Haebler, Inc., according to an announcement by Charles P. Walker, president of the company.



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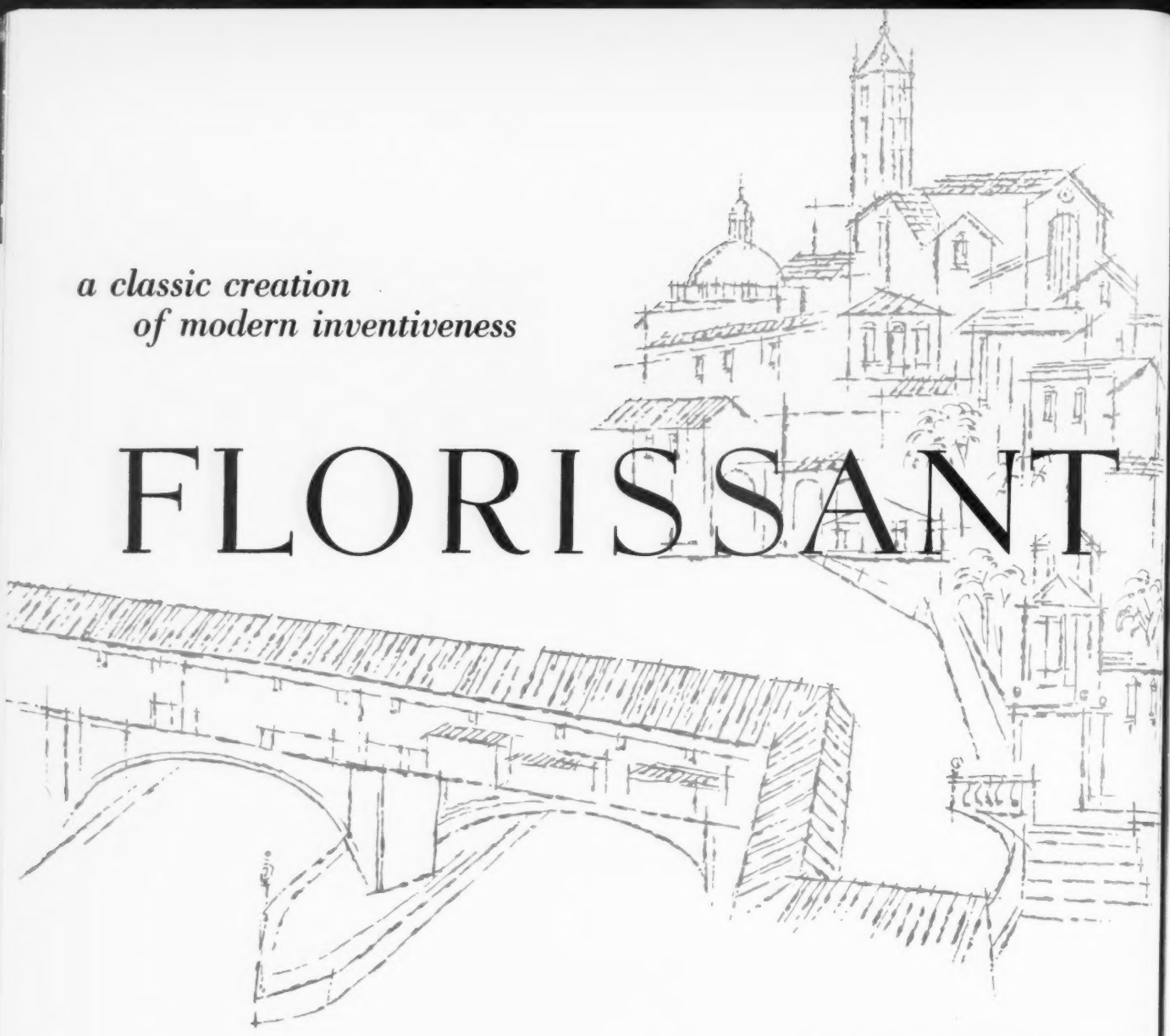

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New Atlas Technical Center

Atlas Powder Company dedicated its new technical center May 23 in a brief ceremony at the company headquarters in suburban Wilmington. The $3,000,000 facility, located next to the company's general office which was opened three years ago, will house the company's basic research and chemical product development activities.

Delaware Governor J. Caleb Boggs told the 150 local industrial and civic leaders, the 600 employees and members of the press who were present that the new center is evidence of Atlas' belief in steady, planned, corporate progress. Atlas President Ralph K. Gottshall said that the technical center is essential to the continuing growth of the company. The new products that will come from this facility, he said, will broaden company's base of operations and greatly stimulate its growth.

A two-story and partial basement structure, the new L-shaped building contains 70,000 square feet of floor space. The building is designed and constructed of materials in harmony with the company's nearby General Office Building.

The center section of the building contains the reception room and offices for the directors of the two departments. The chemical research department occupies the north wing of the building; the Chemicals Division's product development department occupies the south wing.

The chemical research department, responsible for Atlas' company-wide basic research program, conducts long-range research on various raw materials, chemical reactions, and scientific concepts designed to discover new products and processes for the company. In addition, it carries out shorter-range research for the operating divisions that has clearly defined commercial objectives closely related to present process and markets.

Atlas Powder Company's new technical center.

The department is organized in four sections—the organic section, physical chemical section, administrative and technical service section and the toxicology section.

The chemical research department also is responsible for Atlas' atomic research interests.

The product development department, under the direction of F. Faxon Ogden, is responsible for finding new uses for products and new products to serve present and future markets.

The laboratory staff of the department is organized into groups, each concentrating on one or two industries. Each group is composed of people with specialized knowledge and experience in their particular industry such as foods, cosmetics and pharmaceuticals, Darco activated carbons, industrial processing materials, textiles and drycleaning, oil production and refining chemicals, paint, plastics, and many others.

Assistant department directors, William C. Griffin and Dr. George O. Rudkin, Jr., are in direct charge of this phase of the department's work.

In addition to the laboratory groups, the department also has exploratory field development and marketing research sections.

The new center is equipped with the latest scientific instruments and facilities and contains two separate air-cooling systems—one serving the office and lobby area, and a second supplying fresh air to laboratories.

The center was designed and built by the H. K. Ferguson Company, Cleveland, working in close cooperation with Atlas' central engineering department and with the chemical research and product development people who are now using the building. The working force of the center includes more than 100 laboratory professionals and more than 50 laboratory technicians and other personnel.

Phyllis Carter of Atlas' cosmetic and pharmaceutical research and application group shows Dr. Joseph Kalish, technical editor of DRUG AND COSMETIC INDUSTRY, one of the drug products currently under study.

Malmstrom Research Grant

The Malmstrom Chemical Corp., has announced a research grant to the School of Pharmacy, University of Wisconsin, for a study of "the possible interaction between lanolin derivatives and the skin." The research program, under the direct supervision of Professor Dale E. Wurster, will cover a one year period.

According to E. Allen Newcomb, Malmstrom president, areas of investigation may include, among others, determination of the chemical components (if any) of the skin lipids, and other lipid materials, that are adsorbed by the keratin of human skin, determination of the rate and depth of penetration of these lipid materials into the keratin layer and the influence of these materials on the mechano-elastic properties of keratin.

National Labs Exec. V.P.

M. E. Peck, president of The Spirella Company and The Spirella Company of Canada, has been elected executive vice-president of National Laboratories, subsidiary of Lehn & Fink Products Corporation, according to an announcement.

This new packaging idea created an $85,000,000 market

Here's a simple packaging idea with the power to completely change consumer ideas of how a product should perform. Aerosol packaging created an $85,000,000 market for hair fixatives and has revolutionized sales for insecticides, shave creams, colognes and a host of other products. If your product can be brushed, poured or sprayed, you might add new consumer appeal—create a positive competitive advantage if you packaged it in an aerosol.

Sales records and marketing data prove the appeal of aerosol packaging. In a recent survey of the market for hair preparations, 95% of users preferred the aerosol hair fixative and 83% of users preferred aerosol hair dressings. The main reason for each was that aerosols deliver the product in a completely new form—a form that's easier and neater to apply than similar products in conventional packages.

Put the unique advantages of aerosols to work for your products. It's surprisingly simple and inexpensive to have your formulation packaged for testing. Custom fillers near you have the knowledge and equipment to do it for you.

If you don't know the name of a custom filler, write Du Pont. We'll send you a list and include survey data on your market for hair products plus information about Freon* propellents for aerosols. More of today's successful aerosols are powered with "Freon" than with any other propellent. Write E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Division 346, Wilmington 98, Delaware.

Best-selling aerosols are powered with

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REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

*FREON AND COMBINATIONS OF FREON- OR F- WITH NUMERALS ARE DU PONT'S REGISTERED TRADEMARKS FOR ITS FLUORINATED HYDROCARBON PROPELLENTS.

Cutter Labs to Acquire Hollister-Stier Corporations

Cutter Laboratories will acquire the two Hollister-Stier Corporations in exchange for an undisclosed number of shares of Cutter Laboratories Common Stock, according to an announcement by Dr. Robert K. Cutter, president of Cutter Laboratories.

Hollister-Stier, producer of allergy products, has laboratories in Spokane, Los Angeles, Chicago and Philadelphia.

"This merger is a step in the right direction for both companies," Dr. Cutter said. "The country-wide service to physicians, for which Hollister-Stier has been so well and so long known, combined with the extensive research facilities of Cutter Laboratories, opens to both firms new and better opportunities for still greater service to the medical profession in the years ahead."

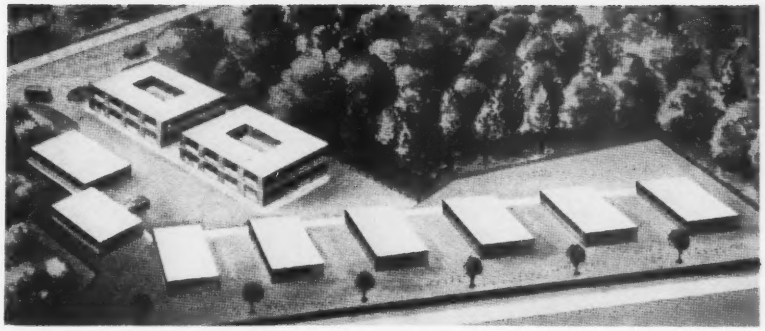
Joins van Amerigen-Haebler

Roy E. Webb has joined van Ameringen-Haebler, Inc. and will be responsible for process development and pilot laboratory operations, according to an announcement by Charles P. Walker, president of the firm.

Mr. Webb was formerly section leader in engineering research at the Buffalo research center of National Aniline Division, Allied Chemical Corporation.

Heyden Newport Exec. VP

Dr. Herman Sokol has been appointed executive vice-president of Heyden Newport Chemical Corporation it has been announced by Simon Askin, president.



Artist's concept of the plant Kolmar Cosmetics (England) Ltd. eventually will have. The first large building has been erected, and manufacturing operations began in January. Demands for additional space are strong, according to a spokesman for Kolmar, and construction of the second large building will have to be started no later than next year.

McGrath Joins Atlas Powder

Cornelius D. McGrath has been named manager of Atlas Powder Company's cosmetic and pharmaceutical industries group, according to an announcement by Bruce M. Bare, marketing manager of Atlas' chemicals division.

CORNELIUS D. McGRATH

Mr. McGrath was formerly with Chas. Pfizer & Co., where he had been field sales manager of the midwestern region for six years. Earlier he had been a sales representative for Pfizer and for Orbis Products Corp.

Pfizer Southeastern Center

Chas. Pfizer & Co., Inc. recently dedicated its new Southeastern Distribution Center in Chamblee, Ga. John E. McKeen, president of the firm, and a group of Pfizer executives were hosts at an open house and buffet attended by more than 500 civic and business leaders and members of medical, hospital, pharmacy, chemical and agricultural groups in the Atlanta area.

O'Brien on Shulton Board

William H. O'Brien was elected to the board of directors of Shulton, Inc. Mr. O'Brien has been vice-president for finance since May 1957. He joined Shulton in 1953 as assistant controller and was named controller and assistant treasurer in 1954.

Borden's Marcelle Plant Mgr.

E. C. Elliott has been appointed manager of the Borden Pharmaceutical Division's newly acquired Marcelle Cosmetics plant in Chicago, according to Charles Livingston, director of production and engineering for the Borden Company's Special Products Division.

Allied Chemical Name Change

Allied Chemical Corporation is the new name of Allied Chemical and Dye Corporation. An announcement by the corporation states:

"We believe that the new shorter name more accurately describes the breath of the company's activities. It makes official the name which customers and other friends have used for many years. It indicates no lack of interest in "National" dyes which we will continue to offer . . . along with more than 3,000 other products."

The dais at the Toilet Goods Association's annual Charles S. Welch Memorial Awards luncheon. Standing, left to right: Dr. Paul Olsen, *Drug Trade News*; the five New York University students who won awards, B. J. Loret, E. K. Gill, James W. Taylor, J. B. McGovern, and Miss Marion Klein; William Lambert, *American Perfumer and Aromatics*. Seated, left to right: Dr. Arnold Corbin, NYU professor; Pierre Harang, TGA president; Charles H. Oestreich, president of the Lander Company and chairman of the luncheon; and Mrs. M. K. Hansen, student.

Once in a blue moon a really fragrant synthetic arrives—Lilial—Givaudan's contribution to floral naturalness! Lilial*—a pure aldehyde with an intense and diffusive note that recalls linden blossoms, with the emphasis on fragrance, represents a new high for synthetics in perfume elegance.

Lilial has remarkable tenacity and lends unmatched floralcy, intimate warmth and unique naturalness to almost any composition. On a perfume blotter it lingers for more than a month.

Unusually stable in soap, *Lilial* is long-lasting and diffusive. It is available in quantity—at a moderate price. No one synthetic has ever presented more desirable qualities to the perfumer.

Samples and technical data are available upon request.

*Trademark

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321 West 44th Street
New York 36, New York

DEWEY H. NELSON

Nelson Named Becco Mgr.

Dewey H. Nelson has been promoted to division manager of the Becco Chemical Division, Food Machinery and Chemical Corporation, according to an announcement by Frederick A. Gilbert, who was formerly division manager but has recently been appointed general manager of FMC's new Inorganic Chemicals Department of which Becco is a part. Mr. Nelson has been assistant division manager of Becco.

Lascoff Gets Alumni Medal

Dr. Frederick D. Lascoff, a member of the Class of '23, Columbia College of Pharmacy, received the 1958 Alumni Medal. This medal is awarded to those alumni of the university who have rendered outstanding service to their constituent group or to the Alumni Federation. Dr. Lascoff qualified on both of these counts.

B-M Market Res. Dir.

Alfred A. Whittaker has been appointed director of market research of the Bristol-Myers Products Division, it has been announced by William M. Bristol III, president. Mr. Whittaker was formerly vice-president in charge of research at Benton & Bowles, Inc.

Elected Lueders Director

Wilfrid F. Beauchamp, vice-president in charge of the Montreal branch of George Lueders & Co., has been elected to the firm's board of directors to fill the vacancy left by the late F. Weber.

Angus and Kessler Move

W. W. Angus, Inc. and Kessler Chemical Co., Inc. have moved their offices to 50 Church Street, New York 7. Telephone is the same: COrtlandt 7-5728.

Shulton Sales Mgr.

William Hayes has been appointed field sales manager, a new position, for the Toiletries Division of Shulton, Inc. He will assist Richard Parks, vice-president for sales, in administrating and coordinating sales, with special emphasis on field activities.

Mr. Hayes, who has served as an assistant sales manager since 1956, joined Shulton in 1946 as a sales representative in the New England area. In 1954 he was appointed assistant to the Eastern branch manager.

FRANK F. DITTRICH

Ungerer Treasurer

Frank F. Dittrich has been elected treasurer of Ungerer & Company, Inc., according to an announcement by Kenneth G. Voorhees, president. Formerly controller of Ungerer, Mr. Dittrich has been associated with the firm for over sixteen years. He is secretary-treasurer of the Essential Oil Association.

John G. Bill, right, president of Merck Sharp & Dohme, presents a medical kit from Merck & Co. to Eugene Ormandy, conductor of the Philadelphia Orchestra, prior to the orchestra's embarking on a world tour. Dr. Milton J. Freiwald, who is accompanying the orchestra on tour, witnesses the presentation.

JULIEN BELLOT

Florasynth Buys Bellot Labs

Florasynth Laboratories, Inc. has announced acquisition of the Julien Bellot Laboratories. Mr. Bellot will assume the position of research director of the Perfume Division of Florasynth Laboratories, Inc. He is leaving shortly for Europe to renew his many contacts in France in connection with his new duties for Florasynth.

Dr. Arthur Cade Retires

Arthur R. Cade, Ph.D has retired after eighteen years as chief bacteriologist for The Givaudan Corporation. For 35 years he has specialized in the applications and manufacture of antiseptics, germicides, fungicides, and disinfectants.

He has published many scientific papers and has three U. S. patents issued to him. Among his inventions are the Cade-Halvorson test-method for determining germicidal activities of substances, the Cade-Skin-degerming test-method, the Cade-Bacteriostatic end point "Reduction Under" test procedure.

Rexall New Product Div. V.P.

Edwin L. Ramsey Jr., director of the new product division of Rexall Drug Company, has been elected vice president of his division, Justin Dart, president of Rexall, has announced. In his new position, Mr. Ramsey will supervise operations of the research and development laboratories, as well as marketing research and packaging research for new products.

Dr. Chance on Pfizer Int. Board

Dr. Franklin S. Chance Jr. has been elected a member of the board of directors of Pfizer International Subsidiaries, John J. Powers Jr., president of the subsidiaries, has announced.

Colton to Sell, Manufacture, Service Alpha Aerosol Line

Alpha Engineering Works, Inc., of Mt. Prospect, Ill., has completed arrangements for the Arthur Colton Company to sell, manufacture and service the complete Alpha line of equipment for packaging aerosol-type, pressure-dispensed products.

According to R. B. Stanley, Alpha president, and K. B. Hollidge, Colton executive vice-president who made the joint announcement, the equipment will be merchandised under the trade name 'Colton-Alpha.' The Alpha organization will continue its engineering, research and development programs in the aerosol filling field, they explained.

The Alpha line includes a complete range of pressurized packaging units, each coordinated with other units in the line to provide maximum flexibility for future product, or production rate changes. Among these machines are single-station and rotary-type high speed pressure fillers for use on both florinated hydrocarbon and hydrocarbon propellants, single-station and rotary-type high speed nitrogen gassers, rotary nitrogen testers, rotary shaking and gassing equipment, single-station and rotary-type high speed crimpers and vacuum crimpers.

France Honors Maubert

Jean Maubert, chief administrator of P. Robertet of Paris, has been appointed Advisor on Foreign Commerce of France. "This is a singular recognition and especially noteworthy since it is not customary in France to make such awards to young men," declared a spokesman for P. Robertet, Inc., New York.

Beneath a portrait of Charles H. Forsman, founder of the C. H. Forsman Company, stand his sons and grandsons who are carrying on the business he established in 1899. Left to right: Thomas Forsman; Paul E. Forsman Sr., secretary-treasurer; John H. Forsman, president; Peter L. Forsman, vice-president; Charles Thomas Forsman; and Paul E. Forsman Jr.

Two New SKF Positions

Smith Kline & French Laboratories has created two new positions in its distribution department to broaden the company's relations with wholesale distributors and national and state pharmaceutical associations, Carl K. Raiser, director of distribution, has announced.

Robert J. Bolger, former administrative assistant to Mr. Raiser, has been appointed manager of retail relations to develop liaison between SKF and pharmacists and their organizations.

Thomas E. Kennedy, a former administrator in the professional service department, has been appointed manager of trade relations. He will strive to insure the efficient and economical distribution of SKF products to wholesalers and retail pharmacists.

Carnrick Vice-Pres.

Harley L. Knauer has joined the G. W. Carnrick Company as vice-president in charge of marketing.

New Royal Jelly Line

J. P. Kaval, who has been appointed manager in charge of the Cosmetic Division of Boyer International, will introduce a new line of cosmetics containing Royal Jelly: Bee Gelee Royal Moisturizer Creme and Bee Gelee Creme Preliminarie, the latter a preparatory product to be used to make the skin more receptive to the actual application of the Royal Moisturizer Creme itself.

New items such as body creme, cleansing lotion, lipstick, finger nail polish, hair conditioner, and other related cosmetics all containing Royal Jelly are in the testing stages and will be introduced as soon as product, advertising, and market tests are completed.

Mr. Kaval formerly was field sales manager for the Syndicate and Department Store Division of Lanolin Plus.

Heads New Upjohn Unit

Dr. Lester J. Coleman, a biochemist, has been appointed head of the newly organized products development section of Upjohn International Operations, Inc., Robert S. Jordan, president, has announced. The new section will be under the supervision of Dr. Fenimore Johnson, medical director and head of the department of scientific services.

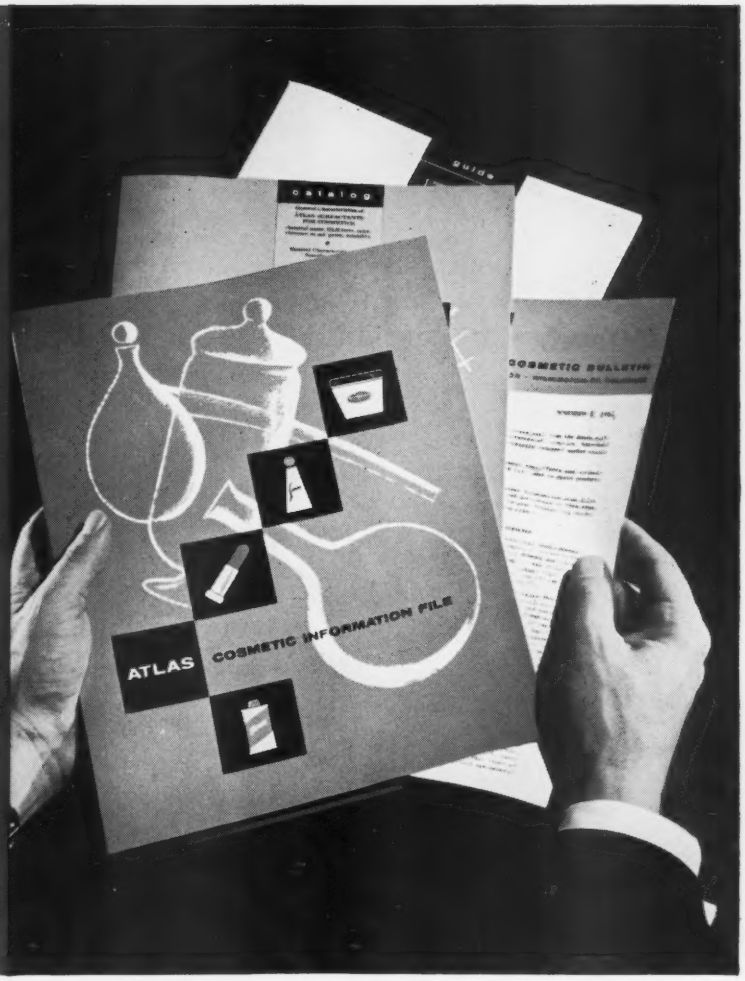
Herbert R. Laist

Herbert R. Laist, head of H. R. Laist Company, which has represented S. B. Penick & Company on the Pacific Coast since 1915 and also represents the New York Quinine & Chemical Works, died at his home in San Francisco on May 18 after an illness of several months.

Laboratory technicians at work in the R. T. Vanderbilt Company's new specialties department plant in Norwalk, Conn. Machinery and equipment for the processing and storage of Veegum are on the first floor; offices, a library, and laboratory facilities are on the second. Although the department sells a variety of chemicals to the pharmaceutical and agricultural industries, only Veegum is manufactured at the new plant.

Fact file for formulators helps speed creation of new cosmetics

...available through the Atlas 4-Point Program



Want to save time and money in looking for data and formulating tips useful in your new products? The Atlas Cosmetic Information File can certainly help! As part of our 4-Point Program for helping cosmetic chemists cut research costs, we have put into one convenient reference file all of our latest information on Atlas cosmetic emulsifiers and SORBO® sorbitol solution and how to use them.

Included in the File are a Catalog of characteristics of the Atlas "32" line of cosmetic emulsifiers and SORBO . . . a Guide full of time-saving tips on formulation theory and practice . . . and a Formulary of tested guide formulas for your lab work.

And that isn't all. Our 4-Point Program—

Keeps you up-to-date
with Atlas Cosmetic Bulletins, to add latest news on formulas, ingredients and trends to your basic Information File.

Simplifies emulsifier selection
with a line of just 32 selected, cosmetically proved emulsifiers that can handle emulsification in any cosmetic formulation.

Lends laboratory assistance
by our staff of experienced cosmetic specialists on your specific formula problems.

Write today for your copy of the Atlas Cosmetic Information File, and let us know how we can assist you further.

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synergism

n. (Greek, synergein, to work together, from syn with + ergon work.)
When things acting together yield a total effect greater than the sum of their effects acting separately.

A new product in the works? An established brand that's reached a sales plateau? Our customers' sales records are proof of the *synergism* that results from fine products new or old plus Rhodia aromatics, compounds, flavorings and masking agents. A *synergism* of your product development staff and Rhodia is in order. Write or phone today.

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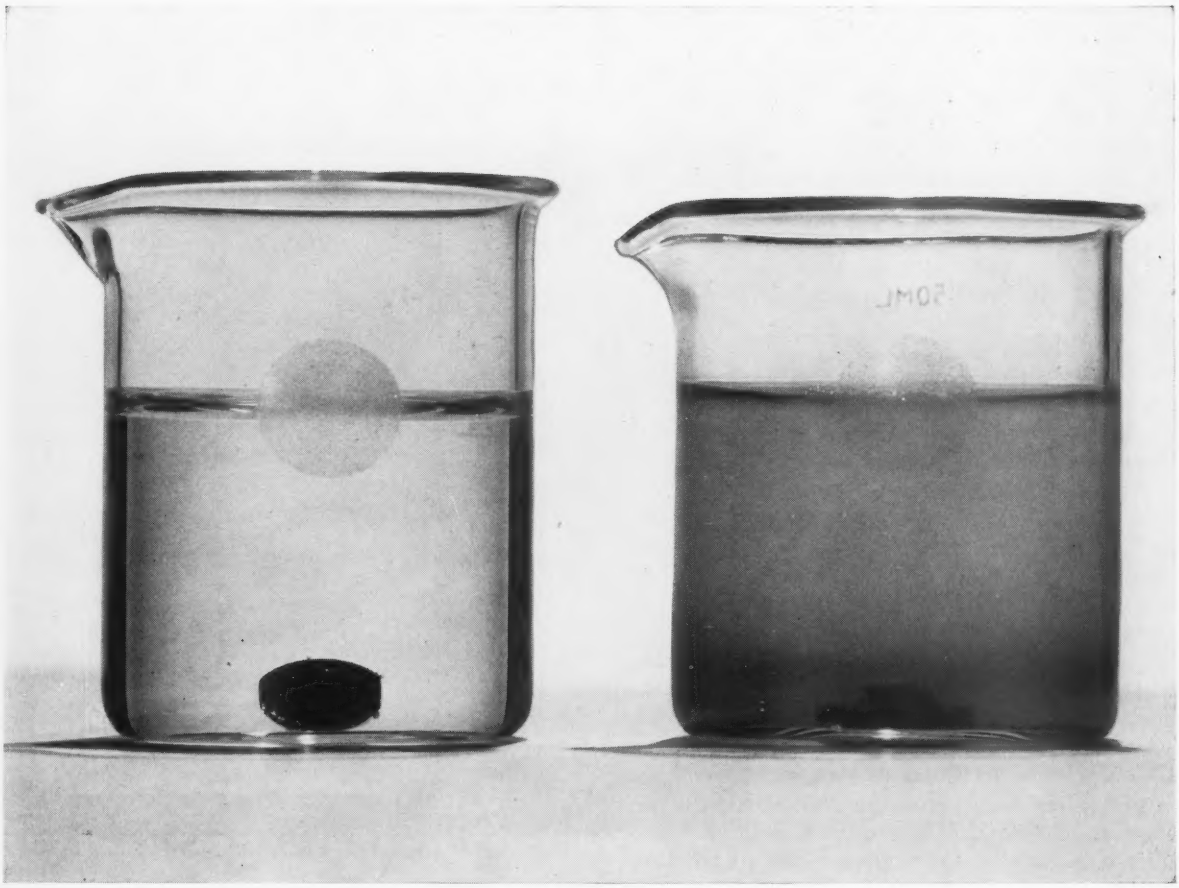

This lecture-table stunt demonstrates the enteric-coating idea in vivid if unsophisticated terms. Standardized U.S.P. testing procedure adds the factor of mechanical agitation.

This is artificial gastric juice at pH 1.5. The tablet was coated with Eastman C-A-P Cellulose Acetate Phthalate. In 24 hours nothing has happened.

This is artificial intestinal juice at pH 7.5. Tablet identical with the one on the left has completely disintegrated in one hour.

For medicaments that should get to the intestine

There are medicaments already developed which would be more useful if only you could get them from the mouth to the intestine.

Now is a good time to re-evaluate such medicaments, perhaps to reactivate products having side effects that enteric coatings might eliminate.

For now you can readily turn to *Eastman C-A-P Cellulose Acetate Phthalate*. The troubles encountered with the enteric coating substances of the past are gone.

Eastman C-A-P Cellulose Acetate Phthalate depends not on the solvent action of water, not on a reliable rate of stomach voiding, not even entirely on alkalinity in the intestine. It depends on the total chemical climate of the intestine.

The material has been used on more than a billion tablets and has taken them intact into the intestine, where they can do the most good. It permits the use of high-speed coating techniques. It is compatible with certain plasticizers.

Eastman C-A-P Cellulose Acetate Phthalate is a free-flowing white powder that's easy to weigh and measure. It doesn't stick. It stays stable in 10- and 50-kilo drums in cool, dry storage.

Full data, including prices, are obtained by writing to ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York, Chicago, and Memphis • W. M. Gillies, Inc., West Coast • Charles Albert Smith Limited, Montreal and Toronto.

"Eastman" and "C-A-P" are trademarks

Also ... vitamins A and E... distilled monoglycerides

... some 3600 Eastman Organic Chemicals for science and industry

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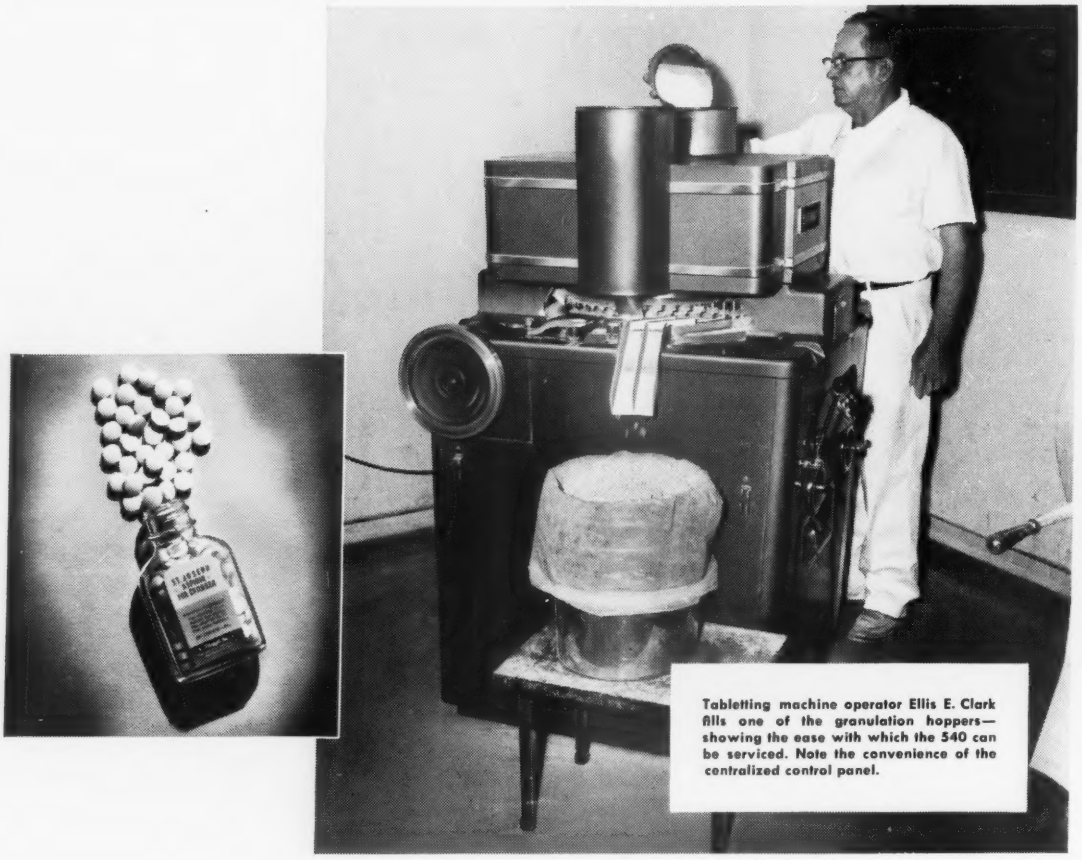

Tabletting machine operator Ellis E. Clark fills one of the granulation hoppers—showing the ease with which the 540 can be serviced. Note the convenience of the centralized control panel.

Plough, Inc. cuts tabletting costs with Stokes Model 540 Rotaries

Plough, Inc., Memphis, Tennessee, is operating two Stokes Model 540 Rotary Tabletting Machines for production of St. Joseph Aspirin For Children.

According to Mr. Hugh F. Crawford, Production Control Manager, "these presses are completely satisfactory because of the production of a tablet that is uniform in weight and hardness. The use of these presses has resulted in a savings of 20% on our cost of tabletting." The Model 540's can operate at the highest speed attainable with the type of granulation being used, resulting in continuous high-speed production of highest quality tablets.

The Stokes Model 540 is advanced design in every respect. It's the easiest machine to set up and adjust that has ever been developed for tabletting. All controls and adjustments are readily accessible on a single panel. Pressure adjustment is made hydraulically by push button control.

The 540 requires little floor space. It is built for long life, long tool service, with centralized pressure lubrication and safety overload protection. It runs so smoothly that no special foundation or permanent mounting is needed.

Find out how the new Stokes Rotary Tabletting machines can save on your own production. Write or call your nearest Stokes office.

Pharmaceutical Equipment Division
F. J. STOKES CORPORATION
5500 Tabor Road, Philadelphia 20, Pa.

STOKES

Management Forum

By FRANCIS CHILSON
INDUSTRIAL CONSULTANT

Organizing The Building Program

Several steps are involved in organizing a new building program. The first is to analyze the problem. Is a new building really necessary? Can existing premises be economically modernized to produce additional capacity without impairing future expansion? Assuming that the answer to the first question is 'yes' and to the second 'no', the next step is to make a very accurate analysis of the space requirements of those products which are to be made in the new plant. It is assumed that the opportunity will be seized to eliminate all slow moving items and dead wood. It is amazing how space requirements diminish when all dead wood is cleared out. It is assumed further that a determination will be made as to which items shall be manufactured in the new plant and which ones sub-contracted. New space cost is so high that there is little sense in providing space to manufacture relatively low volume items that cannot for the moment be dropped for one reason or another; nor is it economical to build space for items that probably will have a limited life even though current volume may be substantial.

The next problem to be solved is plant location. If the business is owned by the Big Boss or his family, the chances are better than a hundred to one that Mr. Big will have definite and unchangeable ideas as to where the plant shall be located regardless of the economics involved. Parenthetically it may be said that the chances are a hundred to one also that the Big Boss will be wrong. He will want the plant near the old one; near his home; near his golf club or possibly on some land owned by his Aunt Tilly. I have found that it is a bit difficult to argue with Mr. Big as to how he shall spend his own dough. If, however, Mr. Big is one of those rare birds who realizes that a plant can and should be located scientifically where it can provide best service to sales; where costs of handling materials in and out are lowest for the longest predictable period of time; where labor of the right sort is plentiful now and likely to remain plentiful; where plant services such as water, power, sewage, effluent disposal and transport facilities are available now and in the future will be in more than adequate quantities; where realty taxes are fair and likely to remain so; where the political situation is stable in the state and where inventory and sales taxes are not imposed now and are not likely to be in the future; then you have an unrestricted opportunity to locate the plant, in the best possible place. In this connection there are firms of engineers who specialize in plant location studies. Having had contact with several I am not impressed with them because the studies are too general and often are beautifully bound compendia of data supplied by local chambers of commerce and the industrial departments or railroads and other public utilities.

Having determined upon a proper location for the new plant, one must then decide whether the building is to be designed by an architect and built by a contractor on a competitive bid basis, or designed and built by a package builder with or without competitive bidding.

There is this to be said about competitive bidding. Labor costs are about the same to every builder almost everywhere in the country because the building trades are the most highly unionized of all trades. There is a slight variation in rates in various sections of the country. About 40 per cent of the cost of your new building will be labor. Material costs are about the same to every builder. The volume purchases of the big builders gives them a very slight edge. But since the material cost of a building is from 25 to 30 per cent this cost advantage doesn't amount to very much. It is more important to know that the architect hasn't specified a brick or a cement block that is made only in one place and will have to be shipped half way across the country. It is important to know that all or most of the construction materials are available

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YOU don't have to make unnecessary, costly compromises in selecting drying equipment. Drying standards set in development stages can be duplicated in your pilot plant and in full production operations when you use Lectrodryers.

Lectrodryer makes a more complete line . . . more carefully tailored-to-need . . . than any other manufacturer. We can meet your requirements *exactly* . . . supply the type and size drier you need at all stages . . . from test tube to mass production. Consistently efficient, low-cost adsorbent drying is assured with a full line of job-matched Lectrodryers.

This is another reason *leading industries look to* Lectrodryer. For help in dryness engineering call or write Pittsburgh Lectrodryer Division, McGraw-Edison Company, 305 32nd Street, Pittsburgh 30, Pennsylvania.

Tiny 45-pound laboratory Lectrodryer sets process standards of drying.

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Leading industries look to

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from local sources. Sometimes when certain materials are short, as steel was recently, the large builders have an edge in being able to get preferential treatment for their orders. It does occasionally happen that the builder may stock standard framing members.

The difference in bids comes about through the manner in which the contractor calculates his overheads and profit. This applies to every contractor whether he is a package builder or a general contractor. If the contractor selected is a package builder, there will be in his charges fees for engineering, architecture and field supervision. These figures may not be set out separately but they will be and must be included. The package builder invariably employs one or more full time architects as employees. Usually they also employ structural and civil engineers as employees. Therefore their charges for such services will be less than is the case with an architect who must retain specialists. Mechanical engineering and process engineering usually is provided by all contractors on a sub-contract or consulting basis. Architects never admit that they sub-constract the engineering phases of their work. But they do. I do not know of a single architectural firm in this country that does all of its own engineering regardless of how big it is.

If an architect is employed and competitive bids are to be obtained, plans and specifications must be completed down to the very last detail before bids are obtained. Otherwise the bids are meaningless because too many loopholes are left for the contractor to crawl through. But to complete plans and specifications in such detail requires from six months to a year or more depending upon the size and complexity of the plant layout. One large midwest firm started a plant with a partial bid upon partially completed plans and specifications. They were assured by the architect that time would be saved by so doing. Minor plans could be finished as the work progressed. The plant cost several million dollars more than had been budgeted; the extras amounted to more than $600,000.00 and the plant was almost a year behind schedule by the time it was finished. It is needless to point out perhaps that this architect, though eminent in his profession and widely experienced in building office buildings, hotels, apartment houses and hospitals, had never built a factory before. It is to be hoped that he knows how to build one now. His client paid enough for his education.

Some package builders will with the help of your own engineering and production staff develop a set of plans and specifications and will permit these to be used for competitive bidding, with the proviso that if they lose the contract, they will be entitled to a fee for their services. That fee incidentally will equal their costs and the profit they would have made if they had got the job anyway. Nobody is in business for his health. Mark that well.

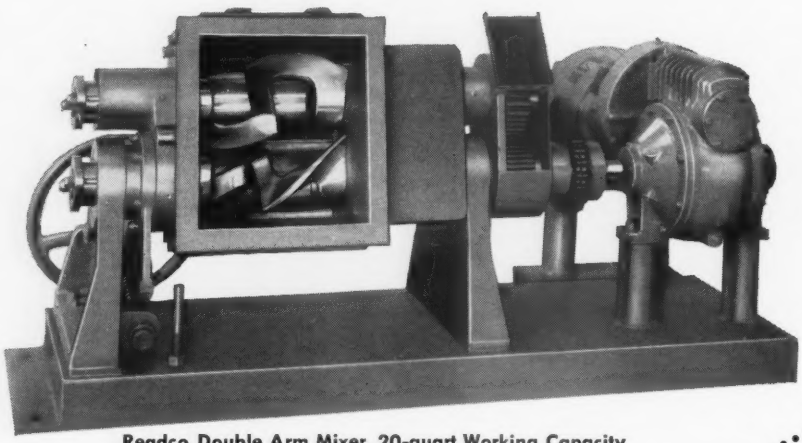
It has been my experience that the safest, fastest and most economical way to build a new plant is to follow the procedure that I have recommended to a very considerable number of clients. In this I have developed with the cooperation of the client's engineering and production staffs a complete set of plans and general specifications. These are sufficiently detailed to obtain bids from half a dozen contractors. That's enough. The reputations and financial standing of the contractors invited to bid should be carefully investigated as a matter of course. The bidders that are too high as well as the ones that are too low are eliminated. The middle man is the contractor of choice. With him the plans and specifications are finished in detail and a new bid submitted. This bid may or may not be higher than the bid originally submitted. But it is a fact that the projects I have been identified with have been finished on time and within a very small percentage of the original bid—and with very few extras. All bids are relative. Always there are loopholes—acts of God and escalator clauses. You cannot be too careful.

I have always favored—all things being equal—the contractor who has worked for the client before and with whose work the client is satisfied. If he hasn't worked for the client I still favor the local contractor because if his reputation is good and his clients are all satisfied with the quality of his work, it will be found that he has an association with a good collection of sub contractors; he will have the inside track on the local union labor situation; he will know the inside political situation—and this is very important especially in getting codes or zoning ordinances changed when necessary. But all this notwithstanding, I believe in putting the local contractor on his mettle and in giving him no unfair advantage in submitting bids. I have found in some cases local contractors who had been so long associated with clients that they charged all the traffic would bear and a bit more too. That's human nature. There's nothing to be gained by sharpening your pencil if nobody insists upon it. As a final word let me say that you cannot be too thorough with your plans and specifications. Once you start building you're stuck with your plans and specifications and your contractor regardless of the final cost of the project.

"Memory Panel" Feeds, Weighs, Delivers to Series of Mixers

Automatic feeding, weighing and delivery of ingredient to any of a series of mixers is controlled from a fully automatic "memory panel" that does not need an operator, according to an announcement from Richardson Scale Co., Van Houten Avenue, Clifton, N. J.

The system is designed to integrate automatic weighing operations to a series of mixers, completely electronically. A small control panel is installed for each mixer in the system, and mixer operators dial



Readco Double Arm Mixer, 20-quart Working Capacity

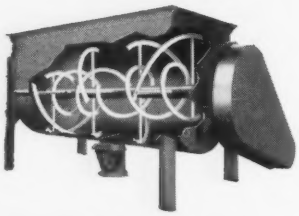
Predict production precisely with READCO Lab and Pilot Plant Mixers

READCO

Incorporating all the basic design features of larger production models, Readco Laboratory and Pilot Plant mixers enable you to make accurate forecasts for commercial processing.

Mixing bowls are accurately machined and fitted . . . have vacuum covers and temperature controlling jackets. Overlapping sigma mixing arms are held in constant close clearance, eliminate dead spots, prevent build-up of materials, aid temperature control. Easily interchangeable mixing arms adapt to various materials or processes.

Ruggedly built of Type 316 stainless steel, or any commercial alloy, Readco lab and pilot plant mixers will efficiently handle even heavy viscous material. They are available from stock in 1, 3, 6, 20 and 40-quart working capacities, with fixed or variable speed drives. For more information see Chemical Engineering Catalog, pages 1483-1490 . . . or write direct.



Readco Spiral Ribbon Mixers—Batch or Continuous. Standard sizes 1 to 500 cu. ft. working capacities.

Readco Vertical Mixers, planetary action, multiple speed, 12 to 175 qt. working capacities. (Model K-20 illustrated)

Whatever the mixing job . . . a READCO mixer!

READ STANDARD

York, Pennsylvania

A Division of
Capitol Products Corporation

requests through these panels to the main "memory panel."

Besides controlling exact weight of each request and routing the weighing to the right mixer, the main panel keeps track of the sequence in which requests were received, and makes weighings and deliveries in that sequence.

The system is designed for manual as well as automatic operation. Manual operation requires an operator at the main control panels, to sequence the material by push button controls through feeding, weighing and delivery operations.

Controls at individual mixer panels include: a weight selector dial for each ingredient; a "Batch Request" button; an "Acknowledgment Light"; and light and heavy weight indicators.

To request a weighing the operator first sets the weight selector dial for the amount of ingredient his formula requires. Then he pushes the "Batch Request" button. Request is transmitted electronically to the main control panel. "Acknowledgment Light" flashes on operator's panel, and remains lighted until the weighing has been delivered to the mixer.

This sequence is followed for all mixers in the system. The main panel retains information from all mixer panels, including specified weights and sequence of requests, until the weighing has cleared through the automatic scale and delivery system.

The complete system includes: screw, gravity or other feeding arrangements from storage bin to scale, depending on the material involved; an automatic hopper scale, accurate to one graduation and suitable delivery conveyors from scale to mixers.

The main control panel includes: signal lights that trace the movement of each weighing for each weighing/delivery operation; mixer indicators, showing which mixer is receiving a weighing; light/heavy weighing indicators; and standard electrical interlocks between all components of the system.

Ode To A Husband—
The Morning After

Good morning, my bright international mate,
My outstanding genius in problems of state.
I trust all is clear in that wonderful mind,
Which last night remodeled the whole of mankind.
Your handling of Russia, the Ruhr, Palestine—
And China and Greece; it was masterful! Fine!
You're sure to be named the Man of the Year—
Here—four or five aspirins: swallow them, dear.
Awake my fine songster; it's well on toward noon.
All morning I've waited, just hoping you'd croon,
A measure from "Chloe" or "Deep Rolling Sea",
Which last night you roared until half after three.
You woke up the neighbors, you tripped on the mat,
And one of your props was your hostess's hat.
I'm sure she will want you again for tonight—
The life of the party whenever you're tight.
Arise, my sweet prince, but be careful, don't skid;
Arise and consider the things that you did:—
The uprooted garden, the splintered garage;
It sounded just like an old-fashioned barrage.
Go visit your hostess and carry a check.
I think if you sign it just, "Pain in the Neck"
The bank will Okay it; 'twould have to be you—
The bird who went berserk twixt dawn and the dew.

So drink up that seltzer, you chattering drone;
It's said to be good for a splintering dome.
I wish I were Sandow, how far would I throw you!
For the next thirty days, please pretend I don't know you!
My juvenile jackass, my dim-witted duffer;
You say you feel awful—Well, goddammit, suffer!

ANON.

PS. Mr. Howard Sumner, distinguished member of the board of the Norwich Pharmacal Company, sent me this ditty and offered the scurrilous opinion that my wife wrote it about me. It's a calumny! She couldn't have.

Public Relations Crap

Every time I buy a few shares of stock I get a phony letter ostensibly written by the president of the company and ostensibly signed by him—although the signature is obviously a facsimile slug—telling me how glad he is that I have joined his stockholder "family"; that he will be glad to answer any questions I would like to ask about the company; that he would be most happy to have me visit the plant or plants of "your" company. Strictly limburger!

A letter like this is just a lot of bull. Such letters fool nobody but they do waste time and cost money. Every company follows this silly practice and I often get such letters months after I have sold a particular stock because I found I'd bought a lemon. In only one case have I received a genuine letter and that was from the president of one of my client drug companies who happened to spot my name on the list of new stockholders. In general these letters are gimmicks conceived by public relations men. In addition to the letters comes a batch of quarterly reports which usually are brief, but it is certainly stretching stockholder relations a long way when I get a letter, as I did the other day, notifying me that there would be a quarterly dividend paid on a certain date—this from a company that has been paying dividends for forty years! All I want is dividends, not useless letters.

Letters like these in companies that have several hundred thousand stockholders cost a lot of money and serve no useful purpose. They are in the same category with the "courtesy reply" which is an answer sent by some companies in response to all letters whether they require answers or not. The best way to handle a substantial part of incoming mail is to file it in the waste basket. But some companies as

a matter of policy insist that all letters be answered and answered promptly. Of course carbon copies of these useless replies are made and duly filed. Business is smothering under an avalanche of useless paper. No wonder we have recessions! We haven't got time to think of business; we have too much crap to read and to write.

Years ago I proposed to a controller of a large company that he could cut his stenographic and filing time by more than half if he used the same sort of fan-fold system for letters that he was already using for invoices. All letters were to be numbered seriatim. This would save the individual setting up of letters and it would eliminate individual filing. The copy strip would be rolled up and stacked in cabinets. A date cross index to the beginning and ending numbers of each day's work was to have been kept so that if a correspondent replied to a letter and failed to give its number, it could be located after a bit of time through the cross index. The controller thought I was quite mad. And of course nothing was done. Typing and filing is still being done in that firm the same way these jobs were done twenty years ago—only now they have ten times as many typists.

Leasing Equipment

The United States Leasing Corporation of San Francisco, Cal. offers a lease-back service for production equipment. This firm will buy your equipment and lease it back for a period of years at a definite rental. The plan is similar to those under which some companies build a plant; then sell it to an insurance company, which in turn, leases it back for a period of years. There are tax advantages in both plans in addition to the liberation of working capital for reinvestment in additional equipment, new buildings, marketing, research or inventories.

Seals Hard Capsules Permanently

A new Colton Model 960 Banding Machine that permanently seals hard capsules by applying a ⅛-in. wide band of clear or colored gelatin at rates up to 200 capsules per minute is now available from Arthur Colton Company, 3400 E. Lafayette Ave., Detroit 7. The new machine, which occupies a floor space of about 8 by 2-ft., provides a process that prevents pilferage of capsules as well as loss of dosage through accidental disassembly.

A 1/3-hp motor with clutches and variable-speed drive operates the machine. Unbanded capsules travel from a plastic hopper through a plastic tube to an escapement that places them in spring-loaded pockets.

After being deposited in spring-loaded pockets in a conveyor, capsules are closed and banded with gelatin applied by a serrated contact wheel driven by an individual 1/20-hp motor with variable speed drive. The contact wheel rotates the capsule as the band is applied.

Banded capsules are then transferred to a drying conveyor by a vacuum transfer wheel. In the drying conveyor, the capsules are rotated while a current of dehumidified or filtered factory air is passed over them to speed the drying of the gelatin band.

New Colton Model 960 Banding Machine

At the end of the drying conveyor which is provided with forced-air cooling, the capsules are ejected by an air jet through a chute into a container.

New Stokes Tabletting Machine

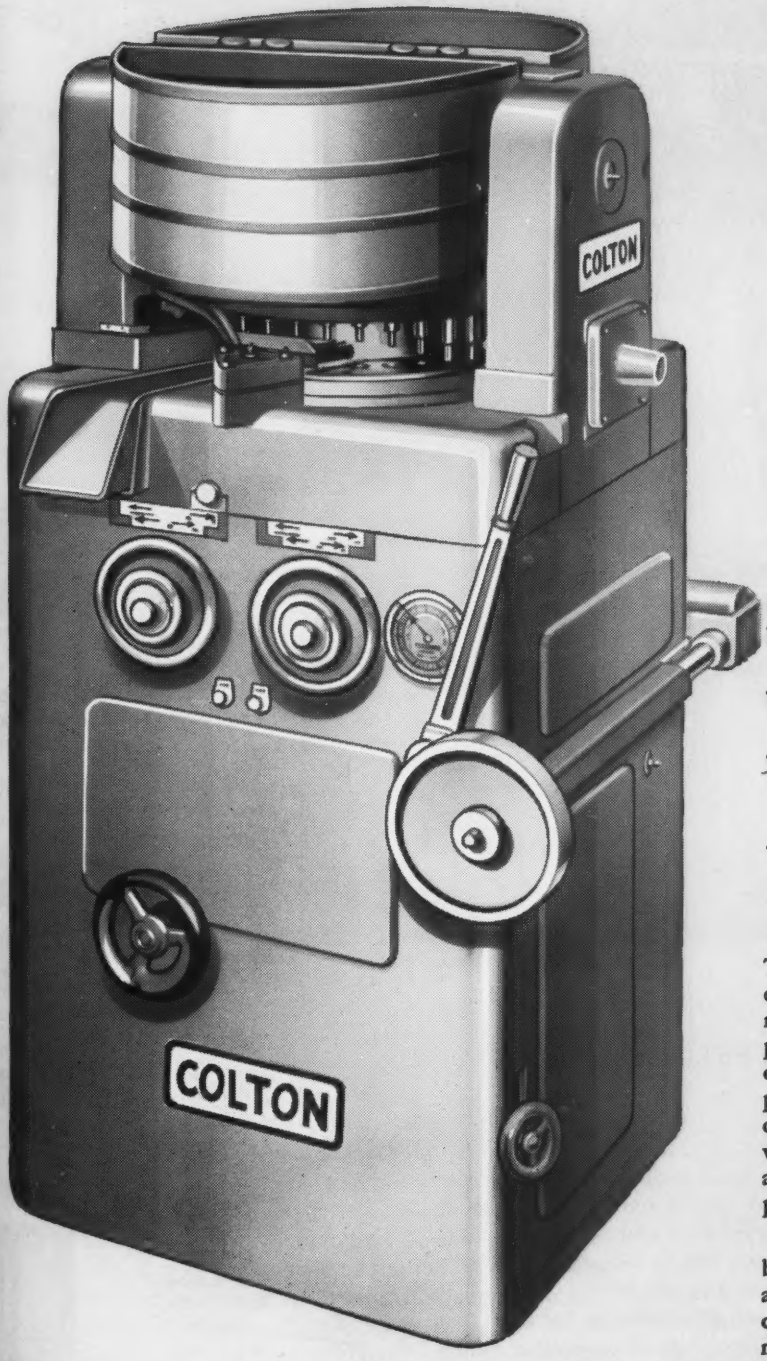
To meet higher production requirements of pharmaceutical manufacturers, F. J. Stokes Corporation, Philadelphia, has introduced a new series of high speed rotary tabletting machines with a 51-station head which offers a potential increase in production rate of nearly 25 per cent over the company's present 41-station machines.

The new 51-station presses are identical to the original Stokes Model 540 presses except for the head, and can make tablets up to a maximum diameter of 7/16 inch and a depth of fill of 11/16 inch. The new head provides 51 compacting stations within the same punch circle diameter as the 41-station head. Even though there are ten more die holes, the new head has a heavier web section because the die screws are now placed at an angle to the perimeter of the head, rather than perpendicular to it, and the holding points for the dies are now located on the outer perimeter of the punch circle.

The use of individual die screws and standard holding-groove type dies provides greater holding power than shoulder-type dies without screws, and also makes it easier to set up and align special-shaped punches and dies. Moreover, punches and dies can be interchanged between the 51-station head and the 41-station, permitting great flexibility in the utilization of press and tooling.

Production rates with the 51-station head will of

Revolutionary New COLTON Ultra-High-Speed Tablet Press with 49 Stations; No Die Locks



1. New low-level one-piece stainless steel twin hoppers allow normal, eye-level inspection by operator. Industry's biggest standard hoppers.
2. New design; each hopper instantly removable exposing upper pressure rolls, punch heads, cam tracks for servicing.
3. New clamp ring eliminates die locks; new design die cannot rise above table surface; easily removed from below.
4. New revolutionary construction steel die table gives better alignment of punches in dies, allows 49 stations in compact table with highest rigidity and strength.
5. New adjustable, removable discharge chute of high polish stainless steel.
6. New control settings grouped on machine front, all in easy reach of operator.
7. New tachometer-counter shows tablets per minute and production count in hundreds.
8. New hand wheel location plus convenient removal slide makes lower punch removal easy.
9. New flush-mounted start-stop switches.
10. New frame; heavy steel weldment, box-type with opening covers.
11. New efficiency; 20% production increase without sacrificing feed time or dwell time.
12. Up to 3500 tablets per min.; up to 7/16″ dia.; 3/4″ depth fill; 9000 lbs. max. pressure; 2 H.P. motor.
13. New streamlined design; easy to clean; round edges, flat, smooth surfaces, no corners, pockets, grooves, crevices.

This Colton No. 249 streamlined low-boy upsets some current ideas about high production machines. It takes no more floor space than standard machines, no more power, much less attention and it is easier to set up, operate, clean, change over and service than any high production machine you've ever known. And, because of basic design advances, it is absolutely rigid, virtually vibrationless and maintains tool alignment and tablet accuracy in continuous, long running, high speed production.

With its revolutionary new features it combines the best features of preceding models. It is a unique achievement and a fitting climax to Colton's three quarters of a century of leadership in this field. Smaller models are available with 33 and 41 stations. Write for a detailed specification sheet on Colton No. 249 Tablet Press.

ARTHUR COLTON COMPANY
DIVISION SNYDER TOOL & ENGINEERING COMPANY
3585 E. LAFAYETTE • DETROIT 7, MICHIGAN
PLANT NO. 2—1030 McDOUGALL, DETROIT • PLANT NO. 3—MANCELONA, MICHIGAN
Sales and Service Engineers Coast-to-Coast • Export Office—13 E. 40th St., New York City • *Offices in Principal Cities Throughout the World*
Specialists in Drug, Chemical and Filling Machinery for Over 70 Years

Courtesy of Charles of the Ritz

FACE CREAMS
AND HAND LOTIONS
ARE PREPARED . . . .
AND PROTECTED FROM
CONTAMINATION
WITH

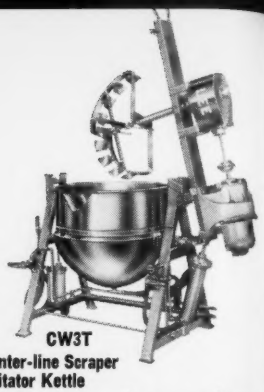
LEE *STAINLESS STEEL* KETTLES

Assuring high quality control in the production of delicate creams and lotions, these Lee steam-jacketed stainless steel kettles are corrosion-resistant and easy to clean and keep clean.

Complete product mixing is obtained through the use of Lee double-motion center line scraper agitators, whose large stainless steel scraper blades continually move the contents from the heated walls toward the center, keeping an even temperature throughout.

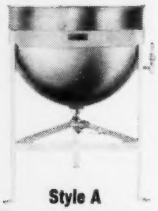
Lee hydraulic operated cylinders—using your present water lines—give perfect control and safety not only in tilting the kettles for pouring and cleaning, but also in raising and lowering the tilting agitators.

Descriptive bulletins for all of our specially-designed processing equipment available on request.

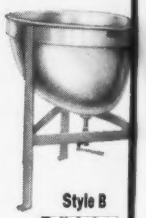


CW3T
Center-line Scraper Agitator Kettle
80 to 300 gal.

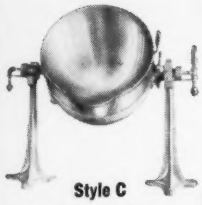
Quick Cooling Pan
50 to 200 gal.



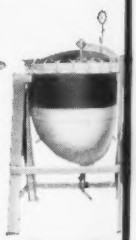
Style A
Two-thirds Jacketed
5 to 500 gal.



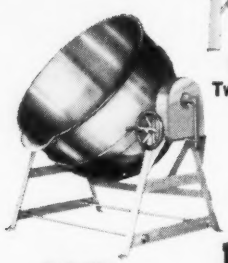
Style B
Full Jacketed
10 to 300 gal.



Style C
Two-thirds Jacketed
5 to 100 gal.



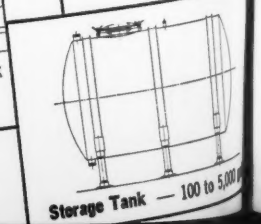
Pressure Kettle
Two-thirds Jacketed
40 to 200 gal.



Style CW
Two-thirds Jacketed
80 to 300 gal.

Pulp Tank
500 to 2,000 gal.

Mixing Tank
25 to
500 gal.



Storage Tank — 100 to 5,000

Technical bulletins fully describing these processing units gladly sent on request.

LEE
METAL PRODUCTS CO., INC.
418 PINE STREET, PHILIPSBURG, PA.

Designers and Manufacturers of Corrosion-Resistant Processing Equipment for over 25 years.

New Stokes 51-Station Rotary Tabletting Machine

course depend on the material being tabletted—the rate at which it flows into the die, compresses, and follows through. But having the same drive system and the same speed of punch travel as the 41-station machine, the new 51-station press can be operated at a practical rate of as high as 3800 tablets per minute, which compares with a maximum practical rate for the 41-station model of 3000 t.p.m.

Other features of the 51-station machine are comparable to those of the 41-station model. It is ruggedly constructed for smooth, quiet operation at pressures up to a maximum of 4 tons—which is a conservative rating and provides a generous safety factor.

Hydraulic loading of the upper pressure rolls with a single spring-release arrangement applies uniform pressure to both the upper rolls, which is accurately indicated on a dial in the front control panel. The amount of pressure applied to the rolls is adjustable, which permits changing the depth of the upper punch entrance. This feature serves to prolong the life of the tooling—some customers have been able to extend the die life as much as seven or eight times by changing the location of the compression point in the die bore—and also permits additional refacing of the punches. Wide roll faces reduce the load on the punches, thus providing a wide safety margin for high speed operation. Roll pressure rate—12,450 lb. per inch of displacement—is the lowest of any rotary tablet machine ever offered.

The adjustability of the upper rolls also provides for the successful production of special tablets such as thin discs, or intricately shaped pieces formed in the die bores. With some granulations that cannot be adequately lubricated, pressing high in the die bore to reduce side-wall friction often provides the only workable method.

All controls are grouped at the front of the press where they are easily accessible to the operator, so that changes in tabletting procedure can be made even while the machine is running. These controls include a new direct-reading dial-type tachometer which shows production rate directly in tablets-per-minute.

Feed frames for both fill stations can be clearly seen from the control position at the front of the press. This facilitates quick and accurate adjustment of the depth of fill.

All major components of the machine are automatically lubricated with pressurized oil from a centralized gear-operated system. A replaceable-cartridge oil-filter and a heavy duty gear pump in the oil system insure positive, trouble-free lubrication at all times.

Low-Cost Filler

A completely new, low cost two line piston filler is being manufactured by the Hope Machine Company, 9400 State Street, Philadelphia 14. Designed to handle liquid, semi-viscous or viscous products, the Hope 15NH2 is described as being extremly flexible and easy to operate, being unbelievably accurate with a no-drip fill at high speeds. According to an announcement by the company, the unit has the following features:

Adjustable head height: To set the machine for different height containers, the simple turn of a wheel moves the entire head assembly up or down—eliminating need for changing of nozzles.

A rising tablet provides "Botton up Fill" with table height being adjusted by simply re-locating a pin.

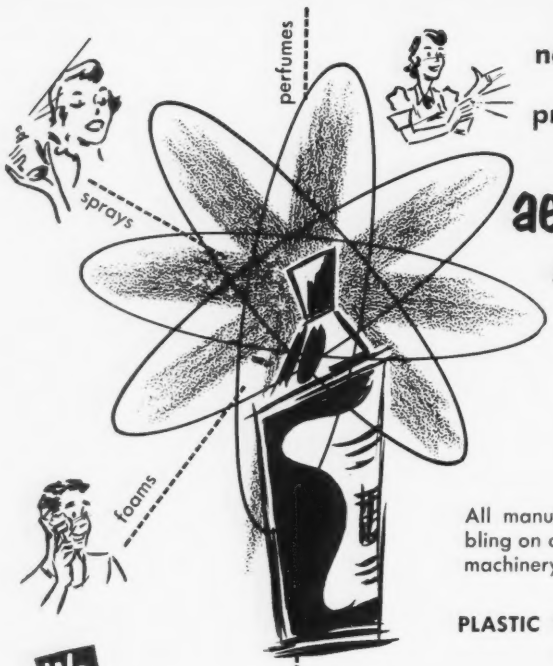
Each filling line has a true "No Container—No Fill" device. The machine does not shut off if the container is missing but simply skips the filling operation for that container.

A new diagonal filling position for containers is said to give handling advantages and conserve space.

A special chain drive conveyor combines accurate positioning with gentle, yet swift movement of containers.

Other features include a special Hope designed piston and expandable piston ring assembly—micrometer type quantity adjustment—variable speed drive (speeds ranging from 15 to 30 cycles)—stainless steel contact parts throughout—heavy duty sanitary construction.

Filling range is reported as ¼ oz. to a gallon, with proper cylinders, pistons and guide rails.



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aerosol packaging

AND NITROGEN FILLING

SPRAYS . . . FOAMS . . .
METERED PURSE-SIZE AEROSOLS

- PRODUCT FORMULATION
- PACKAGE CREATION
- QUALITY CONTROL

All manufacturing, packaging, and assembling on continuous-flow production lines . . . machinery and connections of stainless steel.

PLASTIC TUBES & CONTAINERS FILLED NITROGEN FILLING

We . . .
FORMULATE
MANUFACTURE
PACKAGE

Old Empire

HUmboldt 4-2121
N.Y.C. WOrth 4-7870
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PERFUMES & COLOGNES
LIQUID & CREAM SHAMPOO
TOOTHPASTE
HAIR PREPARATIONS & SPRAYS
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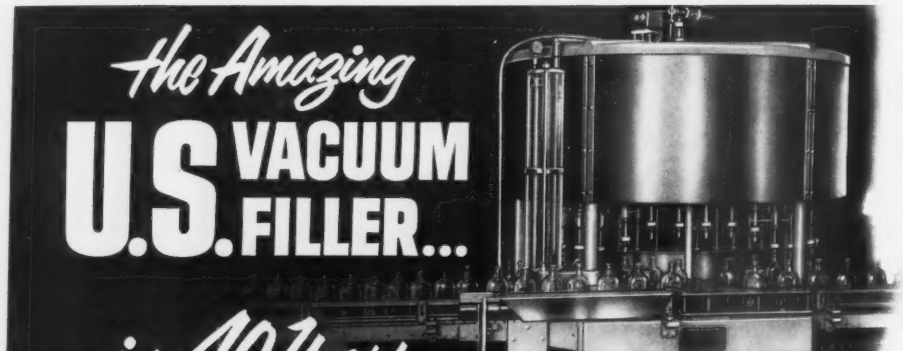
BATH PREPARATIONS
OINTMENTS
PHARMACEUTICALS



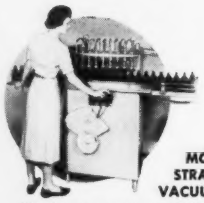
The Amazing
U.S. VACUUM FILLER...
in 40 Years
NO TWO ALIKE!

Every installation is Custom-Engineered. Thus, each user profits by a custom-built filler at a price competitive with standard machines.

U.S. custom engineering automatically develops mechanical advancements. As a result, U. S. Rotary Vacuum Fillers are never outmoded. Constant re-engineering has improved the filling of pharmaceuticals, wines, liquors, foods, condiments, detergents and products which only advanced type vacuum filling can serve.

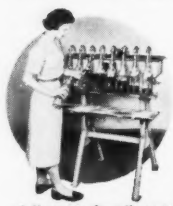
The growing popularity of this Filler seems less *amazing* and more *deserved* when the engineering back of each installation is understood. Does your filling operation meet today's competition at a profit? Put your problem up to U. S. Our recommendations will not obligate you.

Write for the Rotary Filler Bulletin.



MODEL B-49 STRAIGHTLINE VACUUM FILLER
Discharge conveyor, stainless steel or plastic contact parts on order. Fills up to 9 containers at a time. AGST to gallon size. Send for "Bulletin B-49."

MODEL B-2 VACUUM FILLER
Continuous production. Two containers fill while two are loaded. Automatic product supply. Adjustable, flow-regulated. Send for "Bulletin B-2."



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SPECIALISTS IN LIQUID FILLING AND CONTAINER CLEANING EQUIPMENT

Compounder's Corner

C.S.M.A. Papers

Among the many interesting papers presented at 44th Midyear meeting of the Chemical Specialties Manufacturers Association, the following abstracts are of special interest in cosmetics and pharmaceuticals.

In 1937 a new class of detergents, based on the condensation of fatty acids with *alkylolamides*, was described in the patent literature. While the total quantity of alkylolamides of all types used today is not definitely known, a reasonable estimate would place the figure at about 25 million pounds. This substantial usage attests to the importance of alkylolamides as a class of nonionic surfactants, according to T. H. Knitchevsky of Stepan Chemical Co.

Essentially three types are manufactured today: Type I, the 1:1 fatty acid monoethanolamides and isopropanolamides; Type II, the newer "high active" amides, prepared by base catalyzed reaction of fatty ester with diethanolamine; and Type III, the classical 2:1 condensates prepared by reacting 2 moles of diethanolamine with one of fatty acid. Interesting similarities exist between composition of Types I and II whereas Type III is a considerably more complex mixture.

The unique properties of the alkylolamides have resulted in their widespread and growing use in many industries as foam stabilizers, detergents, emulsifiers, textile finishing agents, thickeners, opacifiers, etc.

Amide sulfonates have been produced in the United States for twenty six years. The manufacturing technology immigrated in 1931 from Europe and production started in 1932. This timing of this production was selected to compete with the fatty alcohol sulfates then being introduced into this country for uses in textile processing, according to C. E. Stevens and J. M. Cloney of General Aniline & Film Corp.

Unlike most surfactant "sulfonates" where sulfonic acids are prepared by treating the hydrophobic portion with sulfuric acid — the "amide sulfonates" are prepared as alkaline salts by treating the hydrophobic portion with N-alkyl taurates in alkaline solutions. This technique allows for a wide variety of surfactants of this type.

These surfactants contain three possibilities for varying the molecular structure; the hydrophobic fatty acid portion; the alkyl substitution on the nitrogen in the taurate; and the cation. The most common variable is the fatty acid used.

The controlling economics of this product group lies in the fatty acid market, the availability of alkyl taurates, and the technology of obtaining good yields at the final reaction step. The classical method for putting the fatty acid and taurate together has been through the fatty acid chloride. Techniques have also been developed that allow for direct condensation of sodium N-methyl taurate with fatty acids. Sodium N-methyl taurate is in large commercial production and other N-alkyl taurates are available in development quantities.

These "amide sulfonates" are perhaps more like soap than any other surfactant, yet they have none of the disadvantages of soap. Unlike soap, they work well in hard water, sea water or acidic water. Like soap, solubility decreases as the molecular weight of the fatty acid increases. The combination of soap-like properties with syndet versatility has resulted in constantly expanding markets for amide sulfonates.

The *cationics* represent one of the four major divisions of surfactant materials. Although one of the smaller groups in terms of volume and dollar sales, it nevertheless is continuing to make many significant contributions to the overall economy, according to P. L. DuBrow, Armour & Company.

The unique tendency of these chemicals substantively to deposit onto and selectively modify many naturally occurring and synthetic surfaces gives them, as a class, distinct and interesting properties.

Just how chemical structure and surface adsorption are interrelated and adapted to specific function and purpose is only part of the story. The remainder involves the commercial development of these materials, a look at their physical properties, their limitations, and, finally, a clear indication of where they are used. And applications for this class of chemicals run the gamut from household textile softeners to emulsifiers, corrosion inhibitors, road building acids, petroleum oil recovery agents and modifiers, mineral separators, pigment dispersants, etc.

Amphoteric surfactants were discussed by H. S. Mannheimer of Miranol Chemical Co. in reference to their general behavior and what constitutes amphoterie. Wide variation in possible chemical structures, their effects on behavior and radical differences in utility and readily recognizable physical characteristics pointing to such chemical structure and behavior were shown. Their relationship to anionic and cationic agents and the infinite variety of possible chemical structures approaching in behavior one or the other or representing an exact balance between them were pointed out. Their amazing utility ranges from heavy duty cleaning compounds to irritation free and nonallergenic cosmetic and pharmaceutical products. Their compatability with all other surface active agents,

alkalinity and acidity without sacrifice of any desirable other property in contrast to any other type of surface active agents was shown. Although amphoterics are not low priced products, they can be employed, at low cost, for uses to which other surface active agents do not lend themselves. Several new ones appear to be of high promise, among them germicidal uses unaffected by proteins and starches have been mentioned. Amphoteric surfactants are shown to allow formulations of new products never before possible or to add desirable properties to existing compounds never before obtainable by other surface active agents.

Physical and chemical characteristics of the versatile new insect repellent, *diethyltoluamide*, were given by H. F. Pierce, Hercules Powder Company, together with their relation to pressurized packaging and consumer acceptability. Formulations and the advantage of the aerosol package were discussed. Toxicity and cosmetic properties of diethyltoluamide were mentioned, as well as the relation between the isomers and insect repellency. Data were presented to show the effectiveness of diethyltoluamide as both skin and clothing treatments.

Aminohexose Reductone Antioxidants

Amino-hexose-reductones were evaluated as antioxidants in soybean, cottonseed, and corn oils by C. D. Evans et al (*J. Amer. Oil Chem. Soc.* 35:84, 1958) and were shown to be highly effective by all ovidative and chemical tests. The activity of the eight different reductones was approximately the same in any one substrate. Slightly higher activities were given by reductones of lower molecular weight. Activity was demonstrated at concentrations as low as 0.001 per cent and was shown to be a linear function of the concentration up to 0.02 per cent, the approximate limit of solubility. Outstanding features of the reductone-treated oils were long induction periods, slow absorption of oxygen, and low rates of peroxide development. Reductones are believed not to react directly with peroxides but to prevent peroxide formation by reacting with some precursor.

The combination of reductones with other antioxidants showed synergistic effects in only one sample of corn oil. The activity of combinations in soybean and cottonseed oils was for the most part strictly additive. In soybean oil, citric acid-reductone combinations with each at the 0.01 per cent level gave a slight improvement over the expected activity. Oils stabilized with multiple-component, antioxidant mixtures in which an amino reductone replaced propyl gallate showed less peroxide development and were equally acceptable according to organoleptic scores. Aged oils did not show the organoleptic improvement that would be expected from the marked improvement observed in the oxidative stability. Significant improvements in flavor stability could be observed with reductones only when they were used in combination with another antioxidant. Reductone-treated soybean and cottonseed oils did not show an appreciable improvement in flavor stability. Only the di-n-butylamino- and diallylamino-reductones contributed foreign flavors to the oil. Atypical flavors are believed associated with the amine moiety of the reductone.

At high temperatures and at higher concentrations of reductones a brown melanoid color develops in the oil. The anhydro derivatives developed more color than the normal reductone. The reductones do not withstand oil deodorization conditions.

Improved Royal Jelly

Dr. Hans Walter Schmidt, writing in "Seifen-Ole-Fette-Wachse," 1958, p.16, reports that De Belvefer of Paris stabilized royal jelly by lyophilization but still sought further improvement in activity. The French investigator concluded that the feeding of royal jelly to ordinary larvae results in their conversion to queen bee larvae which then contain concentrated and biologically converted royal jelly. This concentrated and converted material should result in improved effectiveness, and De Belvefer reasoned that the addition of sterilized queen bee embryos should increase the effectiveness of royal jelly. A cream based upon this principle contains 20,000 units of royal jelly plus queen bee larvae in each kilo of lanolin-based cream.

Comment: It is my pleasure to bring this development to the attention of American formulators who may have overlooked the original report. Ugh!

Bulgaryol

Bulgaryol by Dragoco, Inc. is a combination of the natural components of Bulgarian attar in natural proportions, so that chemical composition and physical and chemical constants are comparable with those of the natural product. The yellow liquid is soluble in mineral oil in all proportions and is stable to alkalies. It is suitable for use in soaps and creams as well as in perfumes.

New Methocel Grades

Three new water soluble cellulose gums have been added to widen the Dow Chemical Company line of Methocel products.

The new products, Methocel 60HG, Methocel 70HG and Methocel 90HG, supplement the 65HG type formerly available and widen the range of industrial applications for these chemicals.

Of special interest to the field of water soluble gums is Dow's introduction of a 15,000-centipoise material available in the Methocel 90HG type. Formerly, the highest viscosity in Dow's HG material was 4,000 cps.

The new products feature improved organic solubility, higher thermo-gelation characteristics and special emulsion stabilization properties.

These new products are available in a wide range of viscosities. Methocel 60HG varies from 50 to 4,000 cps.; Methocel 70HG, from 400 to 4,000 cps., and Methocel 90HG, from 100 to 15,000 cps. Methocel 65HG, which has been on the market for several years, is available in viscosities from 50 to 4,000 cps.

Dimethylpolysiloxane Standard

Specification No. 71 of the Toilet Goods Association for Dimethylpolysiloxane has just been issued by the Board of Standards headed by the TGA Scientific Director, H. D. Goulden. A method is given for determination of silicon content, which should be between 37.3 and 38.3 per cent. Greater emphasis, however, is placed upon the infrared spectrum measurement. This provides a means of identification and, by comparison with a standard sample available from the TGA, a method for quantitative determination.

LACTOSE: APPLICATIONS UNLIMITED

MILK SUGAR

LEADING drug and food manufacturers have discovered hundreds of uses for Lactose (milk sugar). Almost every day this versatile material demonstrates its product-improving potential in dramatic new applications.

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For example, Lactose serves as an excellent filler and excipient for hypodermics and compressed tablets. It is soluble, uniform and does not react with active medicinal ingredients. Lactose preserves microbial cultures in a high state of viability. Its slow fermentation creates a nutritional stress on molds, promoting maximum yields of penicillin and other antibiotics. And Lactose is a mild, almost tasteless triturate for patent drugs.

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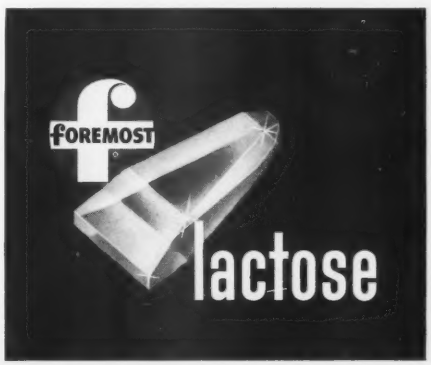
Find out how Lactose from Western can help improve your products. Write Technical Service, Department 23F, telling us the application you are considering.



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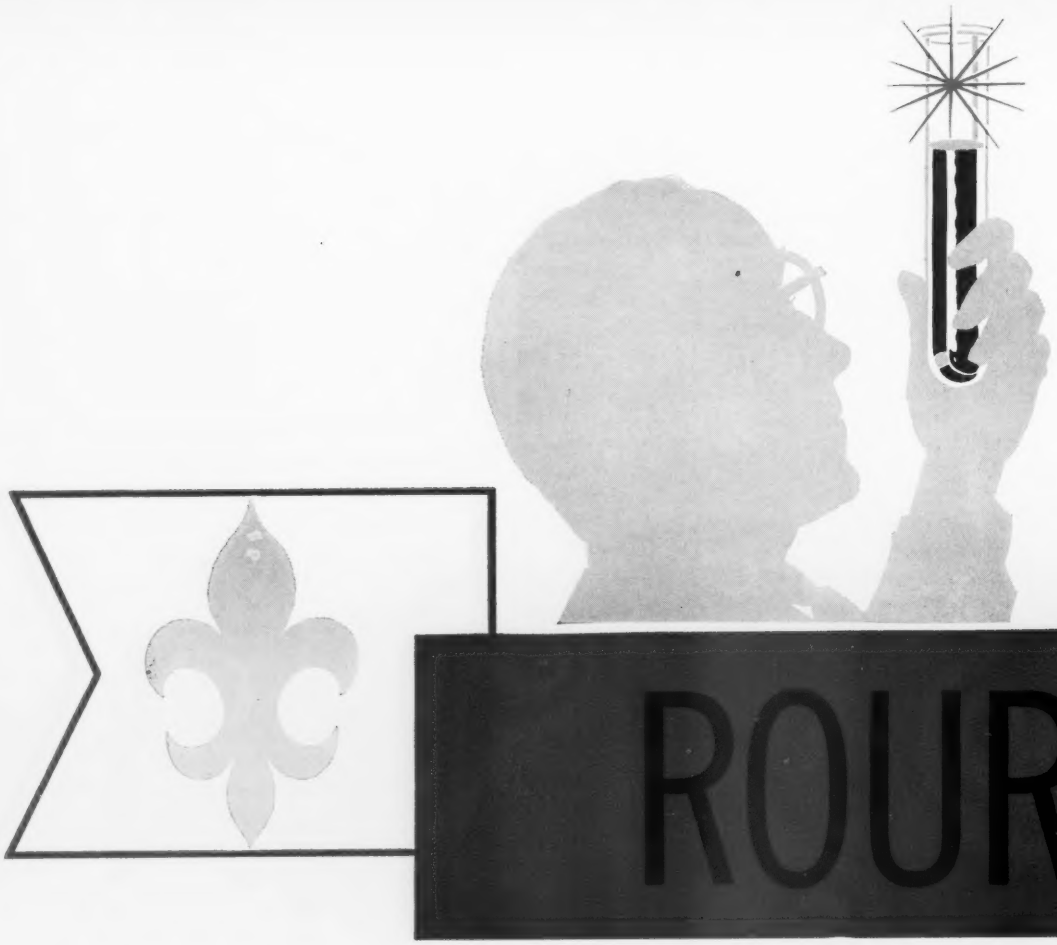

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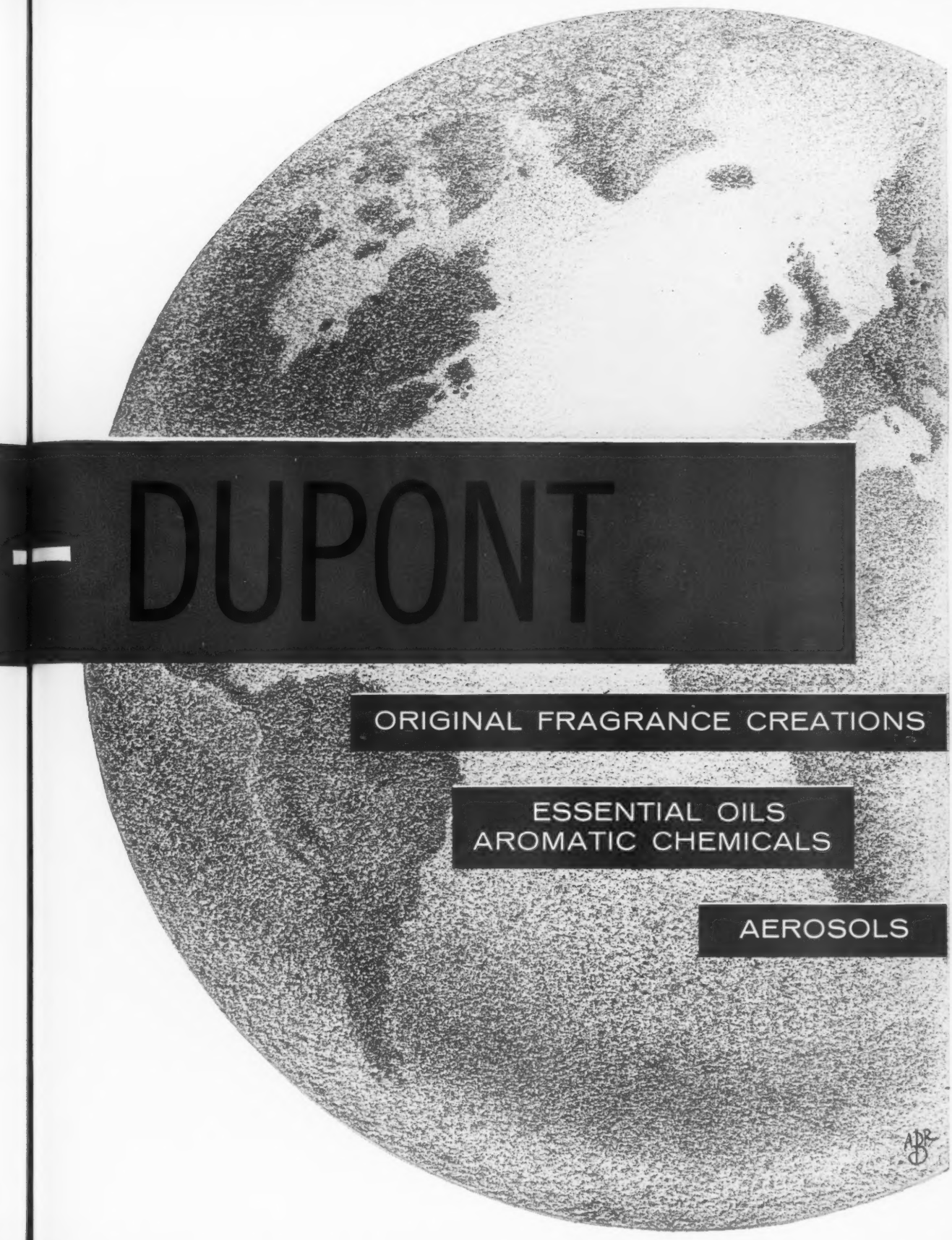
DUPONT
ORIGINAL FRAGRANCE CREATIONS
ESSENTIAL OILS
AROMATIC CHEMICALS
AEROSOLS

Perfumer's Shelf

Rutgers Perfumery Course

With the assistance of several of New Jersey's and New York's perfumery manufacturers and suppliers, Rutgers has just completed a new evening course in "Perfumery and Essential Oils."

The first semester in the fall of 1957, consisted of a course in Terpene Chemistry, given by Asst. Prof. Dr. Donald B. Denney, Rutgers School of Chemistry. Prerequisite for this course was a basic knowledge of chemistry through at least one year of college. Lectures were given every Wednesday from 7 p.m. to 9:30 p.m. for four months. Toward the end of this semester, S. Arctander of Colgate-Palmolive gave guest lectures on perfumery raw materials, derived from the terpenes mentioned during the lectures.

The second semester during the spring of 1958, consisted of lecture and laboratory sections conducted by S. Arctander. Lectures were given on Mondays from 7 to 9 p.m., laboratory from 6:30 to 9:30 p.m. on Thursdays in Newark.

The students for this second semester were not necessarily graduate chemists, but a reasonable knowledge of basic chemistry was expected.

According to an outline published at the beginning of the course, a thorough knowledge of materials was considered highly important to the student perfumer. The various groups of natural perfumery raw materials were defined, literature sources recommended for home studies. Five evenings (10 hours) were devoted to the essential oils, grouped according to their application and importance in practical perfumery. Some 200 essential oils and related materials were briefly described with regard to origin, production, availability, application, economy, etc.

A number of chemical constituents were discussed during the study of the essential oils, particularly when these oils were starting materials in the production of important isolates and synthetics.

From the terpeneless oils and other "processed" oils, the course developed through the isolates to the synthetic perfumery chemicals. Some time was spent on the coumarin and vanillin group of materials in connection with such oils as: flouve, celery seed, lovage, chamomile and fenugreec extract, the synthetic Maraniol (Givaudan) and the materials related to Palatone and Cyclotene (Dow).

The synthetic perfumery materials were grouped according to their chemical nature, but little attention was paid to their chemistry. Subjects like matching and replacing naturals versus synthetics; availability and price flunctuations; synergists and "sophistication," adulteration, contamination, etc. were discussed whenever required.

This section of the course was augmented by two guest lectures. On March 24, Dr. Ernest Guenther, of Fritzsche Brothers, Inc., showed over one hundred color slides from his most recent trip to East Africa. Essential oil production in Belgian Congo, Zanzibar, Reunion Island and the Comores, as well as Citrus oil production in California were discussed, and Dr. Guenther answered questions from the students at the end of the lecture. He was enthusiastically applauded by the class.

On April 28, Dr. Ernest Theimer, Director of Research at Van Amerigen-Haebler, Inc., lectured on the production of—and control with—synthetic perfumery chemicals, examples of the application of instrumental analysis and a brief description of the ionones and the recently developed linalool synthesis, which led to the synthetic, large-scale production of so many important perfumery chemicals.

The ground covered is too extensive for one semester, and the course will be expanded in the coming year.

In the fall of 1958, this first semester will be repeated. During the spring of 1959, Rutgers will offer an advanced course for those who have taken one semester.

Rutgers has made available adequate and spacious laboratory facilities. The study of perfumery raw materials requires individual consultation with the instructor and a maximum of twenty or twenty-five was held on one evening per week for three hours over a period of four one instructor. The laboratory course students seems to be the limit for months.

Various suppliers donated a large number of needed materials.

From 25 to 40 materials were studied each evening, occasionally with repetition. Natural materials were compared to synthetic materials in similar odor groups. Unlabelled samples (blind) of raw materials in alcoholic solution were given to the students, and they were asked to pair the samples two and two, according to similarity in odor type. The students were taught to use their own expressions and terms to describe odors in their notebooks, since no instructor or book can give a satisfactory description of an odor to a student smelling the material for the first time.

After ten evenings (30 hours) on the study of raw materials, compounding was discussed. The basic floral types and some of the non-floral perfume types were discussed, and type formulas presented for the purpose of matching, replacing or modifying the perfume bases. The students were supposed to compound four different floral perfume bases, using only nine materials or fewer, according to the well-known training technique. During compounding, the students produced their own suggestions for modifications, additions, etc.

On April 24, Dr. Henry Gribou,

White Lilac
SUPREME

Here's a claim . . . and a challenge that you'll not duplicate this exquisite, low-cost floral in quality, fidelity or tenacity of fragrance, either at *our* price or at *any* price! Just tell us you're interested in a fine lilac—that you'll study it carefully in comparison with other offerings—and we'll gladly send you an adequate sample of our WHITE LILAC SUPREME to make your tests. This is truly a fragrance of incomparable beauty for use in extracts, toilet waters and colognes. And its price is *under $12.00 per lb.!*

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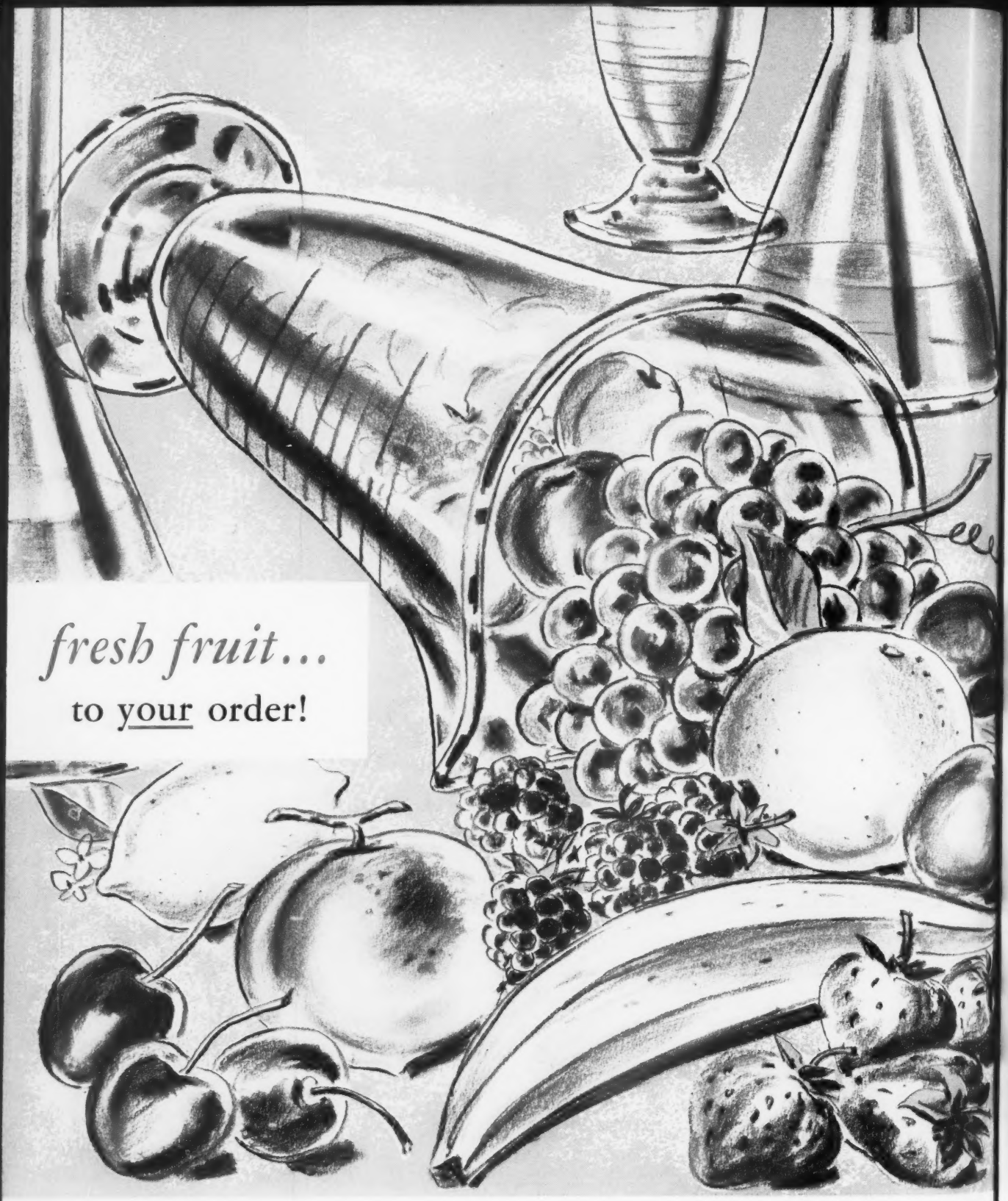

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You name the flavor . . . we'll make it to your order! But better still, let *us* suggest the flavor for your product—especially for your pharmaceutical product, because in this field, particularly, one has to choose and use flavorings with utmost skill and discrimination. From long experience, we have gained the solid knowledge that enables us to lend your product greater palatability and acceptability through the use of *proven, appropriate, compatible* flavors.

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of Dragoco, Inc., was a guest lecturer and he discussed the application of fixatives in perfumery, with several practical examples.

There is room for expanding the course because of the interests of the students. Most of the students are chemists, pharmacists, perfumery technicians or assistants and have quite different spheres of interest. Each one was actually a specialist in his field, and wanted to expand his knowledge of raw materials and to exploit their use in practical perfumery. Many of the perfume, cosmetic and soap manufacturers were represented by students at the course.

Flavors, which seem to interest almost 30 per cent of the students, might form the basis of several special lectures. Some students are more interested in synthetic materials, others more in naturals, etc.

Enfleurage

Beef fat and pork fat are used as bases for enfleurage. The former, in fact, has the greatest power of absorption of the perfume of flowers. It has the disadvantage, however, of being too stiff and mainly for this reason it has been used in conjunction with pork fat.

Enfleurage begins at the end of July or at the beginning of August. The prepared corps is drawn off into vats and very carefully 'smoothed'. The smoothing process consists of slowly stirring the mixture of the two fats whilst they are being cooled, to prevent separation during the decanting process.

Empatage consists of placing the necessary quantity of prepared corps on the slabs in the trays, the quantity varying according to the kind of flower used. (More is required for jasmine than for tuberose.)

The operatives then spread even layers of corps on each side of the slab leaving a space at the edges to prevent the fat from coming into contact with the wood.

From the time the trays are spread until the end of the gathering season, the fat lies over a wide area exposed to the air. A ton of 'prepared corps' represents an area of approx. 160 square metres of trays. The fat is exposed in this way for about a hundred days.

In simple language, enfleurage means placing the flowers on the trays, allowing them to wilt, removing them, putting others in their place, and continuing this process until the required weight of flowers has been treated by the fat.

In practice, it means placing the completely dry flowers—previously sifted (to remove all traces of soil, sand, undeveloped buds and leaves) and cooling them if they have become heated in transit. Leaving them in contact with the fat, for a time which can be determined correctly only by the operatives, according to the prevailing temperature, the period in which the crop is gathered, and the time required for defleurage.

'Patage' consists in reversing the partly-perfumed pomade, so that the surface lying next to the tray, *i.e.* the one which has not completely absorbed the perfume, is now placed uppermost.

'Striage' is done with a kind of comb which passes over the mass several times, in one direction, to make a line of furrows; then once in a vertical direction, the result being the formation of a sort of honeycomb, and this considerably increases the absorption area.

These two operations are performed several times during the enfleurage period.

Defleurage is made by shaking each of the chassis, held almost vertically on the work table. At normal temperature, and if the fat is in proper condition, only about a dozen flowers or petals remain embedded and these are carefully removed by hand.

In a well-arranged enfleurage factory in Grasse, in a basement or semi-basement, situated preferably facing North or East, the temperature can usually be maintained between 20° and 23° for the greater part of the enfleurage season. Each Summer, however, there are ten to twenty days of "heat wave" when the thermometer rises above the permissible limit. This is, of course, a difficult period, but it is also the one in which the finest flowers are obtained.

The flowers removed from the trays are then treated with hydrocarbons. The product first obtained is not exactly a concrete because a mass of fat is taken from the concentrators which has been removed by contact with the flowers. When this mass is washed in alcohol, it gives the absolute from chassis whose particular note does not lack interest.

The pomade is given successive washings in alcohol, it is cooled at very low temperatures, filtered and concentrated under vacuum.

In some cases, the washings, just cooled and filtered, are utilized directly under the name of "washing 36', 'triple extract' etc. These names are not precisely indicative, because there are marked differences in strength and aroma in the perfumed alcohols according to the number of washings.

The solutions are cooled to the maximum, to 25° to 28°C at least. The cooling period, or more precisely the period during which the washing must be kept at a very low temperature, must be determined according to the degree of precipitation obtained.

The filtering temperature is not necessarily as low as the cooling temperature. Filtering has to be arranged between given maximum and minimum temperatures. The time taken for drawing off the solution has thus to be taken into account.

The residues from the cooling are placed aside and taken up again after the operation has been completed, as part of them can still be used.

Concentration in vacuo presents the same problems as for other products. The choice of apparatus is important, as one is faced with the usual vicious circle: under a powerful vacuum, boiling points of the solvent and of the parts of the 'head' are very close to each other and the risk of entrainments may follow.

As the boiling point of the mixing increases with the concentration, the final stages of the manufacturing process are particularly delicate and it is advisable to adopt the method of adding small quantities in succession.

In the process of concentration intermediate chilling is used to increase the ultimate degree of purity of the product.

From the series of washings and coolings one can in fact fractionate an absolute from pomade into ten portions, each noticeably different from the other. In practice, only one portion of these washings is put aside to be offered to the de-luxe perfumery trade.—H. Sozio, *P.E. O.R.* 49:23, 1958.

Trade Literature

Organic Chlorine Compounds

Eleven organic chlorine compounds are described in a 45-page booklet available from Union Carbide Chemicals Company, 30 East 42 Street, New York 17. The booklet, entitled "Organic Chlorine Compounds," discusses applications for ethylene dichloride, Chlorasol fumigant and solvent, propylene dichloride, trichlorethane, butyl chloride, 2-ethylhexyl chloride, dichlorethyl ether, dichlorisopropyl ether, triglycol dichloride, ethylene chlorhydrin, and epichlorhydrin.

Filing Machines

Horix Manufacturing Company, Corliss Station, Pittsburgh 4, Pa., has issued Catalog No. 581, a new comprehensive booklet describing its latest line of fillers for liquid and semi-liquid products.

Foreign Licensing

Pegasus International Corporation, 1 East 53 Street, New York 22, has available a booklet on Foreign Licensing

U. S. Container Feeder

U. S. Bottlers Machinery Company, 4015 North Rockwell Street, Chicago 18, has issued a folder on a new U. S. Container Feeder, which handles any size or shape container —glass, cans, jars—miniatures to gallons or most any containers received in reshipper cases. This piece of equipment is said to release one or more employees for more productive occupations, and to insure smoother, high-speed production.

New Drug Applications

A pamphlet detailing procedures for New Drug Applications to the Federal Food and Drug Administration, outlined in simple non-legal terms, is available from the Chemical Sales Division, The Upjohn Company, Kalamazoo, Mich.

Sonic Sifting Machines

A 28-page booklet describing No-Vo-screen sonic sifting machines is available from United Specialties Company, 9705 Cottage Grove Avenue, Chicago 28.

Two New Diepoxides

Technical information, including properties and suggested uses, of two new diepoxides which are now available for the first time from Becco Chemical Division, Food Machinery and Chemical Corporation, Station B, Buffalo 7, N. Y., are contained in two new bulletins. The chemicals are dicyclopentadiene, described in bulletin 95, and limonene dioxide, described in bulletin 96.

Allyl Alcohol

Reactions and uses of allyl alcohol, a highly reactive unsaturated alcohol, are described in booklet available from The Dow Chemical Company, Midland, Michigan.

Cartoning Machine

F. B. Redington Co., 3000 N. St. Charles Road, Bellwood, Ill., has a folder describing an entirely new single-operator Cycle Cartoner, available at relatively low cost.

Plastic Coated Glass

Wheaton Plastics Co., Milleville, N. J., has available an 8-page, four-color, brochure on plastic coated glass bottles for aerosol packaging.

(*Continued from page 731*)

the development of "antihormones." The chemist may have already produced these but must await the development of biological methods for finding them out.

The third most important level of physiologic investigation which intrigues the steroid researcher is that of the separation of steroid activities. Androgens stimulate the growth and function of the male secondary sex characteristics. Androgenic compounds also serve to regulate nitrogen metabolism so that a greater degree of muscle anabolism occurs in males. Some investigators believe that this peculiarity of nitrogen metabolism is merely another aspect of secondary sex characterization in the male, but others view this influence on nitrogen metabolism as a desirable physiologic phenomenon which they would like to use in all cases, male or female, young or old, where malnutrition, wasting disease or malignancy causes loss of nitrogen in the urine. To exploit this physiologic property, they feel it is necessary to develop steroid structures which will possess the anabolic properties of the male hormones without the virilizing effects. A similar situation exists with the female hormone, where many of the desirable properties of the natural female hormones are contradicted by the feminizing properties. In corticoids again, a comparable situation exists where it is desired to separate the anti-inflammatory properties from the salt retention and edema producing characteristics of these compounds. The search here then is for "non-hormonal" hormones. The goal is to separate the desirable from the undesirable properties and, in many cases, to diminish or negate the hormonal function of the natural steroid compound.

Finally, the steroid researcher is now able to look beyond the horizons outlined by our present knowledge of steroid endocrinology. Since it is now a well established fact that steroid compounds have the ability to enter and participate in diverse cellular activities, the steroid researcher is busily at work fashioning prototypes of all of the known drugs which he attaches to the steroid nucleus with the eager hope that this remarkable molecule will go where he wants it to go and do what he wants it to do. This is not altogether blind reasoning. Steroid glucosides, such as digitalin and ouabain, were among the earliest cardiac active therapeutic agents isolated. Steroid alkaloids such as those found in veratrum, are among the most potent factors yet discovered which influence cardiac rhythm and blood pressure. Steroid anesthetics, hypotensives, cardiovascular stimulants and antibiotics have also been found or made in the laboratory to support this hunch. There can be little doubt that there is gold in the steroid hills. The question is how to get it out.

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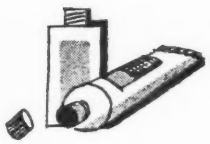

Advancing Therapy

Antiobiotics for the Common Cold

J. Morrison Ritchie, Director of the Birkenhead Public Health Laboratory, reports in "The Lancet" for March 22, 1958, page 618, results of a study which seems to indicate that small doses of antibiotics are successful in aborting colds. Among the treated adult volunteers, 14 colds developed in 533 volunteers (2.6 per 100), compared with 73 colds in 316 volunteers in the controls (23.1 per 100)—a ratio of one to nine.

As described in another paper (*The Lancet*, 1958, page 615), this work originated from the observation that over a period of years there was a sharply reduced incidence of colds when patients were injected with vaccines made from their own saliva (autogenous vaccines). From this it was postulated that the virus factor in the common cold depressed resistance and that major symptoms were caused by an invasion of the patient's own microorganisms. Cultures and then vaccines were made from the saliva and then injected weekly for two to three months.

One hundred eighty-four volunteers were observed in the winter of 1955-1956; 109 were given weekly injections of autogenous vaccines and 75, as controls, received saline only. The cold rate per month for the controls was five times that of those who were vaccinated throughout the course; the percentage of colds passing from the prodromal to the fully developed stage was 13 in volunteers continuing vaccine and 62 in the controls.

Because mass vaccine treatment is impracticable, the author decided to try the effect of short-term controlled antibiotic therapy; suitable antibiotic tablets, given to suck at the beginning of the prodromal stage, might well give sufficient protection by depressing the pharyngeal flora during the time of the depression of the patient's resistance.

To avoid the development of resistant strains or permanently disturbing the normal balance of microorganisms, the effect of brief local applications was tried.

Sensivity tests with saliva indicated that penicillin, erythromycin and streptomycin were inferior to broad spectrum antibiotics; chloramphenical was ruled out because of its bitterness. Tests were made, then, with lozenges supplied by manufacturers and containing 15 mg. of tetracycline, 15 mg. of oxytetracycline, 15 mg. of chlortetracycline or 15 mg. glucose (control). Dosage was two tablets a day for not more than three days.

From October 1956 to April 1957, volunteers were divided into two groups, 581 receiving short-term antibiotic treatment when they felt a cold beginning and 338 receiving the inert tablet. In the treated group, the number of prodromal stages reported was 287 (49 per cent), of which 22 (7 per cent) went on to full colds. In the control group, the prodromal stages numbered 182 (54 per cent), of which 87 (48 per cent) went on to full colds. This corresponds to 4 colds per 100 in the treated and 26 per 100 in the control group. The figures for adults only were 2.6 per 100 and 23.1 per 100, respectively. The antibiotic treatment had no permanent effect on the sensitivity of the pharyngeal bacteria. Some volunteers experienced side reactions, such as irritation of the throat and tongue.

Chlorzoxazone Relaxant

A new oral drug for relaxation of skeletal muscle spasm, offering more prolonged action than commonly used muscle relaxants, is being introduced by McNeil Laboratories, Inc.

The drug is 5-chlorobenzoxazolinone, or chlorzoxazone. Developed in a five-year research program, it will be available under the trademark Paraflex.

In two years of clinical investigation, it has been found that a small dose of Paraflex relieves muscle spasm for six hours in virtually all cases, making it possible to maintain therapy on three doses per day, each dose being one or two tablets.

Clinical investigations over the past two years have established the value of the drug in a list of 35 disorders of arthritic, rheumatic, traumatic, and orthopedic nature. Side effects were said to be rare and mild. In one study of 148 patients, not one had to discontinue therapy because of side effects.

Among the disorders in which chlorzoxazone was found effective are sprains, bursitis, cervical root syndrome, contusions, fibrositis, injuries to ligaments, lumbago, osteoarthritis, stiff neck, strains, and tenosynivitis.

Paraflex is not in itself a curative agent in these conditions. Its sole function is to relax painful muscle spasm and make possible more effiective management by the doctor of the many patients with muscle complaints.

Cerebral Stimulant

Deanol should stimulate the reactivity of the nervous system because it is a precursor of acetylcholine. A preliminary clinical trial by F. Lemere and J. H. Laseter (*Am. J. Psychiat.* 114:655, 1958) has shown promising results with this drug in the treatment of mild depression and nervous exhaustion.

More than 100 patients suffering from various psychiatric disorders, especially exhaustion and depression, have been tried on deanol since

April, 1957. They were given single daily oral doses of 10 to 50 mg. after breakfast. The majority of patients noted increased energy and lessened depression. About 70 per cent of the patients prefer deanol over other drugs for the relief of mild depression and nervous exhaustion. Deanol does not seem to help patients with severe depression, especially with agitation. A few patients with obsessive-compulsive neuroses have been helped. The authors intend to try the drug further in cases of simple senility and schizophrenia.

Overstimulation in a few cases was the only side effect, and it could be controlled by reducing the dosage. Appetite and sleep were sometimes even improved. Unlike other cerebral stimulants, deanol seldom produced a sudden stimulation followed by a let-down feeling. Deanol did not produce a false euphoria and did not become habit-forming. Patients did not develop a tolerance to it. Deanol has been used for 6 months in some chronic cases with continued benefit and no ill effects. Most patients spontaneously discontinue the drug as they feel better. The compound, para-acetamino-benzoate salt of dimethylaminoethanol, is being offered by Riker Laboratories under the trade-name "Deaner."

Gas Sterilization

Discovery of a new bactericidal gas by a team of Chemical Corps scientists was announced by C. R. Phillips, Ph.D., chief, physical defense division, U. S. Army Chemical Corps, Fort Detrick, Md.

The new gas is beta-propiolactone —a compound which had been used previously for sterilization only in aqueous solution. As a gas it acts as effectively as formaldehyde vapor but works more rapidly and with fewer adverse side effects.

Dr. Phillips predicted that a few years study will prove the gas to have important applications with possible use in sterilizing operating rooms, nurseries within hospitals, and the like.

Dr. Phillips announced this new use of beta-propiolactone in a paper on "Gaseous Sterilization" delivered at Seton Hall College of Medicine and Dentistry as part of the Becton, Dickinson Lectures—a series on sterilization techniques sponsored by the medical supply firm and the college.

Work on the new gas has been done by Dr. Phillips' colleagues Robert Hoffman and Benjamin Warshowsky at the Chemical Corps laboratory at Fort Detrick, Frederick, Md. Dr. Phillips reported that beta-propiolactone has been used effectively there to disinfect entire laboratory buildings.

Dr. Phillips' paper surveyed the field of gaseous sterilization, reviewing the early work with formaldehyde and the more recent development of ethylene oxide mixtures. On formaldehyde gas he concluded, that formaldehyde gas did have many practical applications, particularly in treating large and relatively uncluttered enclosed spaces, but that since it is really not acting as a gas . . . rather travelling through the air in a gaseous form and condensing out on all readily available surfaces with only exposed outer surfaces sterilized by this treatment it was unsatisfactory for materials and objects such as woolen uniforms and potentiometers which should be really sterilized in the absolute sense of the term.

Turning to ethylene oxide, Dr. Phillips explained how the fire hazard had been overcome by mixing this highly flammable gas with carbon dioxide and fluorinated hydrocarbons. Summarizing its characteristics he reported that ethylene oxide damages few materials; that it is truly bactericidal and not bacteriostatic in effect; and that the list of organisms reported killed by ethylene oxide is impressive. Since it is a true gas which does not polymerize or absorb on most materials, simple airing quickly removes all residual chemicals from most objects.

He listed penicillin and other biologicals, hospital bedding, opthalmic, urological and other types of medical instruments, eggs (through the shells), whole barrels of spice and even artery sections used for surgical transplants as examples of the great variety of articles reported sterilizable by ethylene oxide.

A disadvantage of ethylene oxide is its slowness of action (at room temperatures and in the usual concentrations reached within a cabinet, six hours or more are often required); in rubber and certain plastics it actually disolves and then evaporates slowly; it can damage some plastics if due to engineering difficulties the gas converts to its liquid state.

Saliva Antibacterial

An Ohio State University dental research team has isolated a chemical substance in human saliva that inhibits or destroys bacteria commonly associated with tooth decay.

This was disclosed in a scientific paper presented by Dr. Gordon E. Green at the 58th annual meeting of the Society of American Bacteriologists convening in Chicago, Ill.

The anti-bacterial factor was described as a chemical entity which is found in the "globulin fraction" of saliva and is apparently peculiar to "caries-immune" persons. These are adult men and women with no clinical evidence, past or present, of tooth decay. Research findings indicate that the substance is a protein, or associated with protein.

Its further identity has not yet been established, although the university scientist and his associates were able to separate it from the caries-immune saliva and test its biologic activities.

Previous culture studies and laboratory tests indicated that a "substance or mechanism" exists in the saliva of the caries-immune persons which could change the decay-producing potential of lactobacilli, and possibly other acid-producing organisms, by reducing their numbers and their ability to produce acid.

Recent studies show that the chemical substance, which the researchers have now isolated, attaches itself to lactobacilli immediately upon contact with caries-immune saliva. Growth of these cells also was inhibited when they were removed from the saliva and placed in other culture media.

Especially significant is the finding that cells treated with caries-immune saliva could be inhibited in growth or destroyed when placed in caries-susceptible saliva. Mixing of fractions of saliva from both types of subjects indicate that there is no similar anti-bacterial factor in the mouths of the susceptibles.

Next step in the research study, according to Dr. Green, is to attempt to discover the source of this chemical substance which destroys or controls bacterial growth, and the amounts that can be found in the saliva of persons with different tooth-decay rates.

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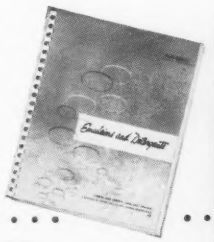

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Skin Research

Skin Physiology and Pharmacology

R. Kooij reviewed the 1956, 1957 literature in *Dermatologica* 116:118, 1958.

Chemistry and Histochemistry

Magnus found high values for freely available – SH in aqueous homogenates of the fresh scales of psoriasis, seborrhoeic dermatitis, chronic psoriasiform dermatitis and lichen simplex chronicus. These conditions have histological features in common. *Matolsky* and *Herbst* made a study of human epidermal proteins by paper-electrophoresis. In successive extration studies with 6M urea and common solvents of proteins a specific urea-extractable substance could not be identified in the human abdominal epidermis.

Anderson, Roe extracted and determined the physical properties of a fibrous protein from the human epidermis. It was postulated that the protein is a keratin precursor in a fibrous form, but a stage prior to the stabilization of the molecule. *Laube* found that the strongly alkaline cleaning agents, especially when they are combined with strongly defatting fat-alcohol sulphonates, do lower the pH of the skin for a few hours by at least two units. Also the alkali resistance is greatly reduced. If the skin was washed with almond bran water, salt solution, tapwater, sinalco soap or emavon, the pH and the alkali resistance was scarcely altered.

Kopf performed adequately controlled investigations in order to elucidate the distribution of alkaline phosphatase in normal and pathological human skin. In general alkaline phosphatase was demonstrable at sites of high metabolic activity, both in normal and diseased skin. *Moretti* and *Mescon* demonstrated acid phosphatases in the human skin with fresh frozen sections. In general maximal staining occurred in the regions of transition to keratin. *Braun-Falco* demonstrated histochemically in the human skin positively glucuronidase activity. *Thies* and *Galente* studied histochemically the distribution of cholesterinases in the vegetative nervous system of the skin. *Wust* writes about aldolase reactivity, enzyme of glycolysis in the skin of man, guinea pigs and mice. In the human skin the enzyme is chiefly localized in the human epidermis. *Formisano* and *Lobitz* demonstrated the occurrence of Schiff-positive, nonglycogen material in the human eccrine sweat glands. The results strongly suggested that the Schiff-positive, diastase resistant material found in the lumen of the sweat-ducts is secreted by the glandular secretory cells in the coil. The material probably consists of a polysaccharide - protein - lipid complex. *Burbach* studied experimentally the vesiculation of the skin. The presence of proteolytic activity in extracts of human epidermis was confirmed.

Metabolic and Other Processes

Mom et al. studied cutaneous clinical physiology during artificial hibernation and neurolysis in 52 patients. The most important features were the leveling off of skin temperature in the whole cutaneous surface, the marked decrease of adrenergic and cholinergic sweating, the lessening of sebaceous secretion and the slight influence on insensible perspiration, keratinization and hair growth. *Kalz, Scott* found hyaluronidase and histamine wheal resorption for measuring fluid retention and the measurement of size and duration of the flare surrounding the histamine wheal for vascular reactivity, suitable methods of observation through the various phases of the menstrual cycle. Fluid retention appears to play a significant role in the premenstrual exacerbations of dermatoses as well as in the premenstrual tension syndrome. *Flesch, Jackson Esoda* showed that pathological scales took up considerably less water than calluses. From these results it is suggested that "keratinizing anomalies" may result from faulty protein metabolism in the non-keratinizing part of the epidermal cell. According to *Mali*, the layer which determines the small permeability of the epidermis for water is the barrier zone between the living cells of the stratum spinosum and the dead cornified stratum corneum. The fats (cholesterols) in the barrier zone together with the tight keratin structure inhibit the diffusion of the water molecules through the membrane. *Zoon, Mali* reported the marked loss of proteins via the skin and a distinct hypoproteinemia in four out of five patients with erythrodermia in whom careful nitrogen balances were performed. It is concluded that this loss of proteins interferes with the building up of the body proteins and maintaining of the water balance. *Kirk, Chieffi* found that the 20-minute rate of sebaceous secretion in the forehead was lower in elderly women than in elderly men. *Strauss, Kligman* showed that a variety of bacterial species is capable of producing the typical pungent odor in sterile apocrine sweat.

Brun, Grasset studied the intensity of plantar, palmar and axillary sweating. No significant differences between the sexes were found. Axillary sweating was less strong in children but this was not the case in palmar and plantar sweating. *Peiss* et al. studies the hydration of the skin and its effect on sweating and evaporative water loss. They

found that the uptake of water by the skin when immersed in various solutions is primarily a process of hydration of the stratum corneum. This hydration tends to inhibit sweating on the palm and the sole, the amount of inhibition being related directly to the amount of hydration. *Lobitz* et al. found that regardless of the type or location of the trauma the sweat duct responds immediately at the site of the injury by spiralling its lumen and surrounding this spiral with new epidermal prickle cells. *Mustakallio* showed in a case of facial hemihyperidrosis that the eccrine sweat glands displayed a more intense succinic dehydrogenase activity in the hyperidrotic sweat glands, especially in their ducts than in the glands normally perspiring.

Tijima, Watanabe described a simple slide glass technic for dopa reaction and tested the effects of 38 chemicals on this reaction in the human epidermis. Among the substances tested, p-thiocresol and sodium diethyldithiocarbamate inhibited the reaction completely at the final concentration of 1:6,000 M. and hydroquinone, monobenzylether of hydroquinone, 2-mercaptobenzothiazole, cysteine ethyl ester, sodium cyanide, copper sulphate, ammonium molybdate and silver nitrate at the final concentration of 1:600 M.

Pharmacology

Burckhartdt found in laboratory tests that petrolatum, lanolin and simple ointment recipes often gave a better protection than a number of the protective salves on the market. The value of these protective salves is chiefly prophylactic. *Kuske* et al. carried out comparative tests with industrial protective pastes. On diseased skin the industrial pastes tested were of little use. *Inderbitzin* concluded that the composition and texture of the skin protecting creams now on the market do not meet the requirements of dermatology. Their appearance in industry proved useful in that the workers have thereby started to pay more attention to care of the skin. *Tenchio* stated that protective creams are a progress but other hygienic precautions are necessary in addition. *Karchner* discussed the value of several methods for evaluation of protective creams. It is concluded that a combined test in the laboratory, clinic and factory is necessary. *Berres* studied the morphology and skin changes evoked by ointments. It was found that the changes only show graduated differences, they were reversible and nonspecific. *Brun* et al. found that the manner of preparing a cream can influence its acanthogenic action, and even if one prepares two creams in the same manner and with puriss. products, the degrees of acanthosis can vary in a significant manner. *Hunziker, Brun* reported that sebum protects against an aqueous acid solution (aluminum chloride solution). *Massmann, Zschunke* investigated skin changes evoked by various halogenic alkyl compounds. *Kuhn* studied the influence of cleansing agents on the skin of mice. *Shelmire* found that a water-soluble dye shows greatest diffusion to the skin surface from those vehicles which are easily miscible with sweat and maintain an aqueous skin-vehicle interface. An oil-soluble dye and vitamin A diffuse best from a non-volatile water-miscible vehicle which maintains the least hydration of the skin-vehicle interface. Salicylic acid causes the most pronounced irritative reaction in a water-in-oil emulsion.

Scott, Kalz showed the inhibition by topical application of corticotrophin, hydrocortisone and fluorocortisone on the process of cutaneous inflammation. The extra-adrenal effect of corticotrophin is discussed. *Polano* found by paired comparisons in a hospital and successive treatments in an out-patient department that in many cases 1 per cent hydrocortisone ointment gave better results than the treatments used till now for the same conditions. *Wells* studied the effect of hydrocortisone on standardized skin-surface trauma. Application of hydrocortisone after removal of the keratin from the skin surface by repeated stripping with cellophane tape was followed by inhibition of vasodilation first apparent after about 4 hours and maximal at 12 hours. Ointments containing 2 per cent glycyretinic acid had none of the vascular effect of hydrocortisone.

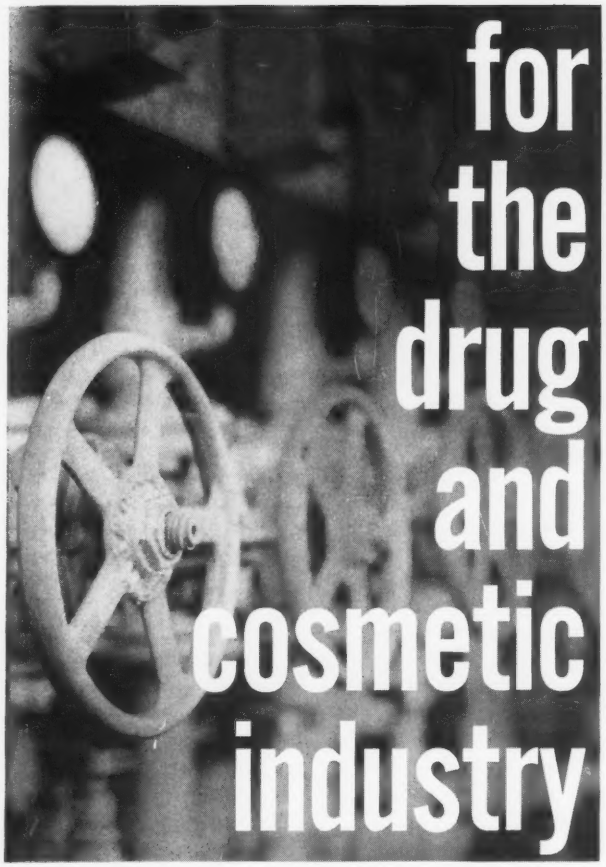
Karchner used the electrodermatogram according to Regelsberger to test the pharmacological activity of various compounds and found this method very useful.

Mom, Clerc found that the antidiuretic hormone (Pitressin) has a water retaining effect on the skin.

Paschaud rubbed various metal salts (aluminium, calcium, chromium, iron, copper, magnesium, nickel, zinc) incorporated in a neutral ointment base on the depilated flanks of guinea pigs. All these metals, when compared with the ointment base alone, caused only a slight thickening of the epidermis, with exception of copper which caused a strong thickening. *Adam, Korting* demonstrated the percutaneous absorption of an extract from a vegetable oil (Cochlearia armoracia L) by means of a biological test in the urine of the rat. *McAdams* ascribes the fact that actual blister formation does not occur in animals, to the lack of true sudoriporous glands. *Stoughton* studied the disruption of epithelial cells by heat and specific chemical agents. Fresh human epidermis, exposed to urea or lithium bromide for relative short periods of time, showed extensive disruption of intercellular bridges and cytoplasmic tonofibrils. Mild thermal burns in humans showed acantholysis and perivascular infiltrates beneath the area of acantholysis. According to *Klarmann* substantial advances in the effectiveness of hydrolyzing aluminium salts of perspiration control should not be expected because of the risks of skin injury or fabric damage. Probably more can be expected of cationic surfactants, also of certain simple electrolytes which seem to act by affecting the electrophysiologic potential of the sweat ducts. *Lennart* carried out studies on the dermal connective tissue barrier of alloxandiabetic rabbits and its reconstitution after administration of testicular and bacterial hyaluronidase. In skin pretreated with bacterial or testicular hyaluronidase the hyaluronidase—sensitive barrier, reformed after six hours, was increased in the diabetic animals.

Physical Processes

Trennier et al. wrote a monograph on the reaction of the human skin to ultraviolet light and the influence of various substances thereupon. Among other amino acids, the vitamin B group, atarbrin, resochin, hormones and tissue extracts. *Holti* reports that cortisone after local introduction greatly reduced the intensity and duration of the skin reaction to ultraviolet radiation.



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A request to Dept. H-44 for samples will receive prompt attention and we will welcome the opportunity to put these better products in your hands.

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HARCHEM DIVISION
WALLACE & TIERNAN, INC.
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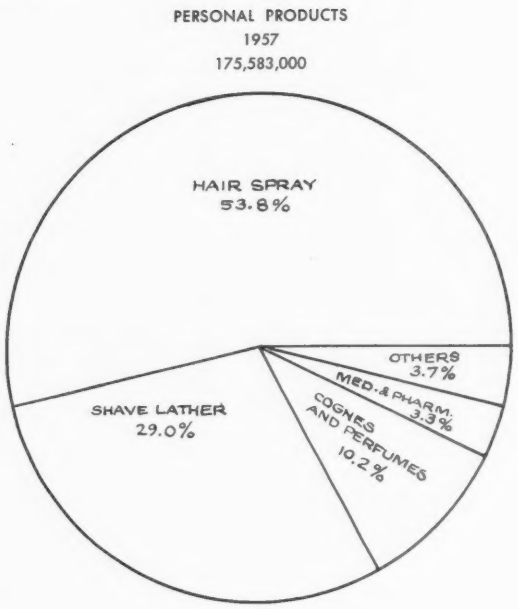
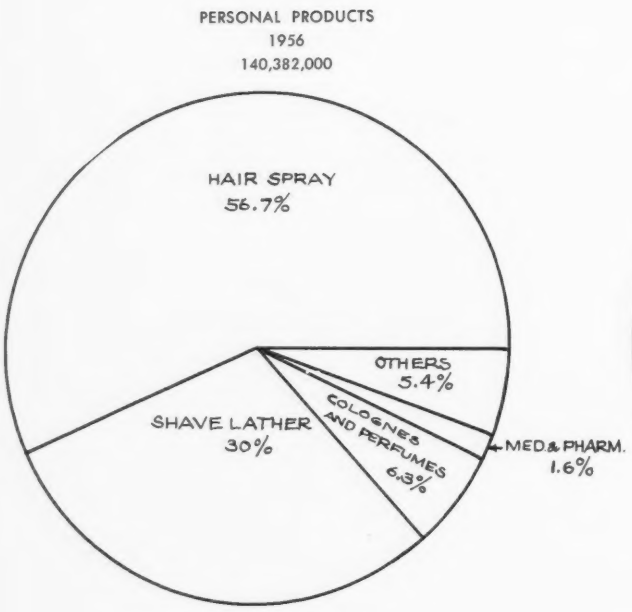
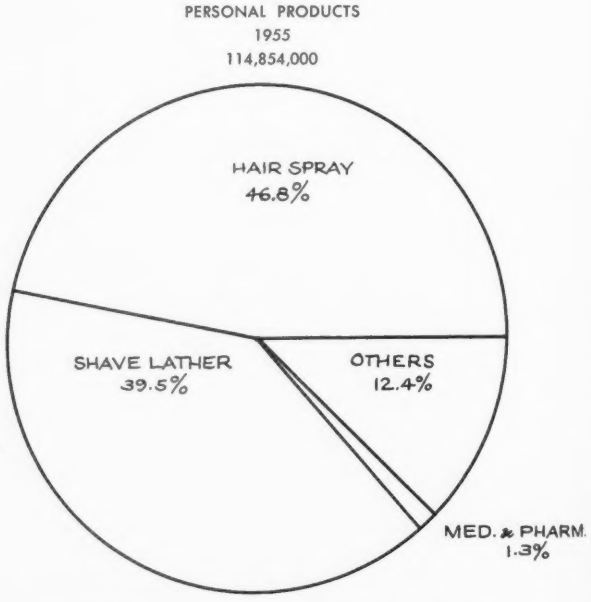
IN CANADA: W. C. HARDESTY CO. OF CANADA, LTD., TORONTO

(Continued from page 751)







Personal Products
Thousands of Units

	1957	% Change	1956	% Change	1955
Hair Sprays	94,432	+ 18.6	79,641	+ 48.2	53,791
Shaving Lather	50,869	+ 21.0	42,068	— 7.2	45,387
Colognes and Perfumes	17,881	+103.5	8,769	—	——
Medicinals and Pharmaceuticals	5,799	+156.0	2,275	+ 56.3	1,455
Sun Tan Preparations	618	—	——	—	——
Others	5,984		7,729		14,221
Total	175,583	+ 25.0	140,382	+ 22.2	114,854

Personal Products retain substantial consumer popularity. The leading aerosol product, Hair Sprays, accounted for 53.8 per cent of all Personal Products with 94,432,000 units, an increase of 18.6 per cent over the 79,641,000 units in 1956, which was 48.2 per cent greater than the 53,791,000 units in 1955.

Shaving Lather, 50,869,000 units in 1957, was 21.0 per cent ahead of the 42,068,000 units in 1956 which was 7.2 per cent less than the 45,387,000 units in 1955. Colognes and Perfumes in aerosol packages have increased substantially, 17,881,000 units in 1957, an increase of 103.5 per cent over the 8,769,000 units in 1956. Medicinal and Pharmaceutical aerosols are now developing greater importance, 5,799,000 units in 1957 as against 2,275,000 in 1956 and 1,455,000 in 1955. Nitrogel aerosol dentifrices, unavailable in 1957, bid fair to occupy a substantial statistical position in the 1958 figures.

Industry's Books . . .

Cortisone Therapy (Mainly Applied To The Rheumatic Diseases), *by J. H. Glynn, M.D., Consultant in Physical Medicine to the Prince of Wales and Tottenham Group of Hospitals, 162 pp., pocket size, Philosophical Library, Inc., New York, (1957), cloth,* **$10.**

The author discusses from practical experience the relative values of Cortisone, Corticotrophin, Hydrocortisone, Prednisone and Prednisolone. The effects of treatment, the advantages and disadvantages, the indications and contra-indications, the technique of withdrawal, are analyzed, and a broad general picture produced.

Practical Allergy, *by M. Coleman Harris, M.D., and Norman Shure, M.D., 471 pp., Illus., F. A. Davis Co., Phila., Cloth,* **$7.50.**

Allergy in practice is the keynote of this new book. The authors cover allergy as a possible etiologic factor in all fields of medicine. They bring enlightening aid on many obstinate cases, many obscure ills of mankind. Careful study of the individual patient is stressed by the authors. They clarify and simplify the important subjects of skin testing, the studies concerning foods, pollens, drugs; bacterial, physical and insect allergy; allergy extracts, desensitization . . . all of the modern aids on the diagnosis and treatment of diseases of allergenic action.

Iron Exchange Resins, *by Robert Kunin, Rohm & Hass Company, Second Ed., 466 pp., John Wiley & Sons, Inc., New York, (1958), cloth,* **$11.**

This second edition, like the first, is written primarily for readers who have recently become interested in ion exchange technology, or those who have been working in a narrow area of ion exchange and are curious about the overall aspects of the field. It is the most comprehensive and up-to-date treatment available today, providing detailed descriptions of the nature and preparation of all kinds of ion exchange resinous materials.

Techniques For Marketing New Products, *by Douglas Banning, 308 pp., McGraw-Hill Book Company, Inc., New York (1957), cloth,* **$6.50.**

This book outlines how a small business can increase profits by the right marketing techniques. It guides you, step by step, through all parts of merchandising, advertising, and managing the introduction of a new product. It emphasizes the tested and proved methods especially valuable for a modest-sized business. It shows how to—locate new product ideas; figure the chances of success before risking promotion; select the best, most profitable distribution method; create or supervise your own advertising and sales program; comply with federal, state, and local laws; and assure the financial growth of your enterprise into a profit-making business of your own.

Process Engineering In The Food Industries, *by R. J. Clarke, M.A., 355 pp., Philosophical Library Inc., New York, (1957), cloth,* **$10.**

This is a chemical engineering approach to problems in the food industries. Each operation or process is considered under three headings: general principles based on purpose, mechanism, rate factors, methods and horse-power required; description of equipment, arranged to classify and detail plant in common use; illustrative description of plant used in the food industries. The wide range covers: fluid flow, heat exchange, filtration, evaporation, distillation, extraction, expression, crystallization, drying, dehydration, absorption, mixing, size reduction, gas absorption, heat processing methods.

Editing The Small Magazine, *by Rowena Ferguson, 271 pp., Columbia University Press, New York, (1958) cloth,* **$4.50.**

The author of this work is Associate Editor at the Methodist Publishing House. This book is intended for publishers of house organs, journals of organizations, and scholarly publications. It tells the story of how a small magazine is produced.

Bergey's Manual Of Determinative Bacteriology, *by Robert S. Breed, E. G. D. Murray, and Ninety-four contributors, Seventh Ed., 1094 pp., The Williams & Wilkins Company, Baltimore, (1957), cloth,* **$15.**

The most obvious change in this Edition is that of the separation into two volumes of the material comparable to that which appeared in the Sixth Edition. The present volume is entitled the seventh edition of Bergey's Manual of Determinative Bacteriology. This Manual contains an outlined classification of the bacteria and the descriptions of the taxa from Class to Species and Subspecies, together with the appropriate keys. Nearly all species regarded as having been inadequately described or that could not be definitely placed have been excluded, together with many of the less important synonyms of the accepted species. These, together with the index to all the literature of both accepted and poorly described organisms have been transferred to a volume to be known as the Index Bergeyana. The latter volume will include all descriptions and citations to species formerly found as appendices or indefinitely placed as species incertae sedis. The host and habitat index will also be found in the Index Bergeyana. The net result is that the Manual itself contains descriptions of many more species with more adequate descriptions than have former editions.

Polyamide Resins, *by Don E. Floyd, General Mills, Inc., 230 pp., Reinhold Publishing Corp., New York, (1958), cloth,* **$4.50.**

This contains the basic chemistry and raw materials of polyamide resins, methods for their manufacture, a definitive discussion of key properties, and information on all important applications. These latter include fibers and filaments, coatings and films, moldings, extrusions, adhesives, inks, castings, and sealants. The applications are classified, then the considerations and properties that make these resins useful are reviewed. Throughout the book, an effort is made to relate applications to resin structure. Also explains why certain polyamides are used in certain fields; predicts and discusses future trends.

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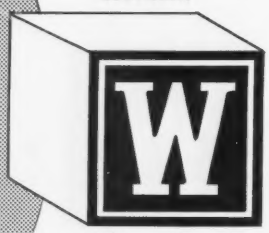

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Melting point raises.

WAXOLAN is a clean hard wax separated from pure lanolin. Use it as an emollient and for gloss, grooming effects, raising m.p. and viscosity.

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AMERCHOL PARK — EDISON, N. J.

Reader's Questions . . .

Cold Cream: *Although cold creams are among the oldest of creams and presumably a great deal is known about them, we would appreciate any generalizations you can make on their composition and properties.* SAN FRANCISCO.

Oddly enough, there are still a number of misconceptions going the rounds even about a product seemingly as thoroughly investigated as a cold cream. The modern cold cream consists of beeswax, borax, mineral oil and water. A useful rule of thumb, based upon average acid values for the wax, sets the ratio betwen beeswax and borax at 16:1. On a percentage basis, the other two components, totalling 83, can be divided between 50 oil and 33 water to make a very good cream; the water may vary between 25 and 40 and the oil in proportion. Below this limit of water the cream tends to be unstable and too fluid when the upper limit is exceeded. A cold cream is not invariably a water-in-oil emulsion; the phase relation will depend upon the relative proportions of the two phases and especially upon the proportion of borax or other alkali. With the beeswax fully neutralized and the proportion of water in the neighborhood of 35, the emulsion is of the oil-in-water type, if conductivity and similar tests retain their validity. These factors also hold if borax is replaced by an alkaline potassium salt or an amine. The viscosity of the mineral oil used has relatively little effect upon the consistency of the cream.

Cold creams, made by the basic formula, possess a luster that is virtually impossible to duplicate in another formulation. Nevertheless, except as the most elementary ointment vehicle, modifications are desirable. Spermaceti does not impair the luster and whiteness, but adds some skin-softening quality. Cetyl alcohol is useful but tends to dull the cream. Lanolin deserves its reputation as an emollient. Some of the mineral oil may be replaced by a small portion of vegetable oil or preferably isopropyl myristate. Mineral and other waxes serve to modify consistency and proportions of petrolatum alter spreading characteristics.

(Continued from page 729)

a feature of the industry over the past several years showed some tendency to level off, according to TGA. Shampoos gained but not at the previous rate and the bulk of the still sharp increase in hair preparations was supplied by aerosol sprays. This group of preparations has had a phenomenal growth over the past several years and there is no sign of diminution.

Fragrance products as a whole showed a slight increase over 1956 but this increase was largely due to heavier sales of toilet water and cologne, says T.G.A., which says that actual perfume sales were practically the same as in 1956 although some houses showed relatively sharp increases.

Sales through every type of outlet showed a substantial gain over the previous year but the sharpest gains were made in the food category and for the first time sales through food stores were higher than sales from house-to-house and approached the total sales through department stores. However, it should be pointed out, according to T.G.A., that sales are not strictly comparable between food and department stores because of the completely different types of products handled by these outlets. Drug store sales showed a percentage decline and fell below 29 per cent of the market for the first time.

The following table shows sales through the various types of outlets since 1950:

	Chain & Independent Drug Stores	Dept. Stores & Specialty Shops	Food Stores	House-to-House	Ltd. Price Variety Stores	All Other Outlets
1950	37.0%	27.0%	6.1%	14.0%	11.0%	4.9%
1951	36.0%	27.0%	8.5%	16.2%	10.0%	3.8%
1952	34.5%	22.0%	14.0%	17.5%	8.5%	3.5%
1953	32.0%	22.1%	15.5%	18.3%	8.4%	3.7%
1954	30.2%	22.5%	17.7%	19.4%	7.5%	3.3%
1955	29.4%	22.3%	17.9%	20.0%	7.3%	3.1%
1956	29.3%	21.6%	19.1%	19.6%	7.2%	3.2%
1957	28.6%	20.6%	20.3%	19.7%	7.3%	3.5%

Sales of taxable cosmetics for 1957 by quarters are:

First quarter (Jan., Feb., March)	$215,820,000
Second Quarter (April, May, June)	230,410,000
Third Quarter (July, Aug., Sept.)	224,250,000
Fourth Quarter (Oct., Nov., Dec.)	316,660,000

PERFUME, COSMETIC AND TOILET PREPARATIONS SALES AT RETAIL AS ESTIMATED BY T.G.A.

YEAR	Sales in Millions of Dollars	YEAR	Sales in Millions of Dollars
1914	39.8	1936	336.5
1915	45.0	1937	374.0
1916	71.5	1938	412.3
1917	95.4	1939	425.1
1918	103.7	1940	449.9
1919	116.5	1941	463.6
1920	129.5	1942	481.4
1921	126.0	1943	507.5
1922	147.3	1944	593.0
1923	194.6	1945	711.3
1924	220.3	1946	758.2
1925	256.4	1947	743.8
1926	300.2	1948	749.8
1927	329.7	1949	770.8
1928	355.2	1950	840.1
1929	378.4	1951	912.8
1930	336.2	1952	1,004.0
1931	297.1	1953	1,020.8
1932	288.4	1954	1,086.8
1933	300.3	1955	1,192.2
1934	324.4	1956	1,321.0
1935	322.1	1957	1,430.7

(Continued on page 812)

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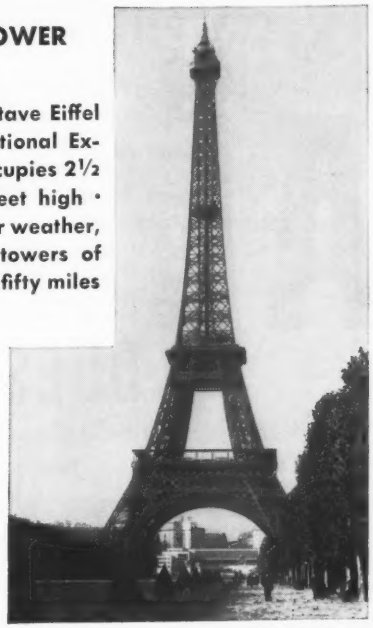
Designed by Gustave Eiffel for the first International Exposition, 1888 · Occupies 2½ acres and is 984 feet high · From the top in clear weather, may be seen the towers of Chartres Cathedral, fifty miles away.



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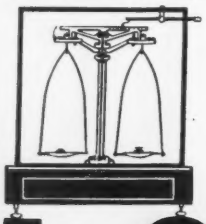
A LITTLE



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THICKENING .20%	**Will thicken and give good body properties to lotions, syrups, adhesives.**
SUSPENDING .20%	**Will suspend inert particles in pharmaceutical products, i.e. sulfa suspensions, pigments.**
STABILIZATION .15%	**Will stabilize viscosity and regulate penetration.**
EMULSIFYING .35%	**Will produce stable oil in water emulsions even at very low pH.**
GEL-PRODUCING 1.0%	**Will form tender to strong resistant gels for pharmaceutical purposes.**
FILM-FORMING .15%	**Will produce an oil resistant film on paper while 1% solutions will form films suitable for coatings.**

YOURS ON REQUEST: Technical data covering properties and applications of algin products. Simply note application of interest so that we can advise which type of algin product is most suitable for your requirements.

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Percentages of collections of retail cosmetic taxes by areas and states are approximately as follows:

NEW ENGLAND	
Maine	0.33
New Hampshire	0.17
Vermont	0.09
Massachusetts	2.12
Rhode Island	0.37
Connecticut	0.91
MIDDLE ATLANTIC	
New York	24.6
New Jersey	1.9
Pennsylvania	4.2
SOUTH ATLANTIC	
Delaware	0.14
Maryland	1.14
District of Columbia	1.26
Virginia	1.32
West Virginia	0.71
North Carolina	1.15
South Carolina	0.51
Georgia	1.63
Florida	1.35
EAST NORTH CENTRAL	
Ohio	4.8
Indiana	2.1
Illinois	7.3
Michigan	5.4
Wisconsin	1.2
EAST SOUTH CENTRAL	
Kentucky	0.71
Tennessee	1.32
Alabama	0.90
Mississippi	0.51
WEST NORTH CENTRAL	
Minnesota	1.71
Iowa	1.05
Missouri	3.0
North Dakota	0.22
South Dakota	0.22
Nebraska	0.68
Kansas	0.91
WEST SOUTH CENTRAL	
Arkansas	0.61
Louisiana	1.13
Oklahoma	1.26
Texas	4.20
MOUNTAIN	
Montana	0.24
Idaho	0.39
Wyoming	0.14
Colorado	0.99
New Mexico	0.28
Arizona	0.36
Utah	0.39
Nevada	0.13
PACIFIC	
Washington	1.58
Oregon	1.14
California	10.80

PROPRIETARY ASSN. MEETING

(*Continued from page 733*)

the fact of the matter is that none has been forthcoming. It does not appear to me that this problem will remain in status quo. Sooner or later the pattern will change, perhaps in your favor, perhaps not. There seems little reason to rejoice about favorable court decisions State by State. Perhaps this is the only way to resolve the issue, but I am just enough of an agnostic to doubt it. There is, as I am sure you've been counselled, the distinct possibility of losing some of these legislative skirmishes and judicial decisions despite excellent legal advice. What then? Are you willing to accept defeat with good grace? Are you happy about the prospects of a variety of marketing patterns on a State-by-State basis? As I see it, the proprietary manufacturers and pharmacy are now in a cold war with hot skirmishes flaring up all the time. The atmosphere is neither pleasant nor conducive to progress. This is not and should not be an East versus West controversy. Yet one wonders what real chance there is for satisfactory settlement of major international problems when we are not even able to resolve our own internecine problems between members of the health team.

"Sincerely, I believe that the issue of restrictive sales can be solved. It is not a food and drug problem under the Federal Food, Drug and Cosmetic Act. It is strictly an economic problem, but this makes its eventual resolution no less important. Its solution can be accomplished. It may be costly, it may be time

consuming, it may never be a completely satisfying result, but a workable answer must be achieved if peace is to be attained for the benefit of all parties.

"Perhaps here I may make a suggestion for your consideration. You are admittedly confronted with a serious problem of your relationships with pharmacy. They need, as do pharmacies, shoring up for the present and building up for the long future ahead. Why not, then, have this Association undertake the support of some basic study or studies in the psychology of conflict. Much is already known about this subject, some of which I suspect is directly applicable to this problem. As the study progresses, it could well provide answers and contributions whose usefulness would extend far into the future. It might indeed be advantageous to explore the possibility of pharmacy's participation in the study and perhaps even joint support."

Robert B. Brown, Bristol-Myers Company, was elected president of the association succeeding Sherwood E. Silliman, Vick Chemical Company, who was named to fill a one-year term on the executive committee. Three vice-presidents elected are: J. Mark Hiebert, Sterling Drug, Inc.; William F. Laporte, American Home Products Corporation; and Dewey S. Mims, B. C. Remedy Co. Dr. Howard A. Prentice was reelected exectuive vice-president and treasurer, and James H. Merritt was reelected secretary.

Elected to serve three-year terms on the executive committee are: James B. Braun, Murine Company; Ivan D. Combe, Eastco, Inc.; James H. Grove, Grove Laboratories; Harry H. Hoyt, Carter Products; and George H. Hyde, Mentholatum Company.

Five honorary vice-presidents were elected: Charles S. Beardsley, Miles Laboratories; A. H. Diebold, American Home Products Corporation; James Hill Jr., Sterling Drug, Inc.; Edward K. Hyde, Mentholatum Company; and S. M. Rising, J. H. Guild Company.

The nominating committee was headed by Kenneth Bonham, Whitehall Laboratories; and included Frank Bell, Pharma-Craft Company; and E. T. T. Williams, Warner-Lambert Pharmaceutical Company.

EYELASHES

(*Continued from page 735*)

the lashes in the outwardly swept position. On investigation, it was found that the appearance intensity decreased as the angle between the lashes and the base was reduced from 90°, until it reached a minimum in the neighborhood of 45°. A further decrease in the angle caused a sharp increase in the appearance intensity as the lashes carried color outward from the eye, giving the eye an exaggerated length.

The lash hairs should be rigid enough to hold their shape, but not so stiff that they could injure the eye. The term "stiffness" as it is used in textile technology

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- The *pure* liquid lanolin
- Soluble in mineral oil *and* the skin lipids
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- A *new* cosmetic wax
- The *high* melting point *super* lanolin
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is not of interest here, referring to the ratio of the breaking stress to breaking strain. The resistance to bending is measured by the force required to deflect the end of a fiber when the other end is held fast. This resistance to bending may be calculated, using Young's modulus of elasticity, according to the following formulae:

(a) for a round rod held at one end,

$$F = 3\pi MR^4D/3.92\ L^3$$, and

(b) for a rectangular rod held at one end,

$$F = MA^3BD/3.92\ L^3$$,

Where;

F is the force in milligrams applied to the free end,
M is the modulus of elasticity in dynes/sq. cm.
R is the cross-sectional radius in centimeters,
D is the deflection of the end in centimeters,
L is the length of the rod in centimeters,
A is the thickness of the rod in centimeters.
B is the width of the rod in centimeters.

It should be noticed that the resistance to bending increases as the fourth power of the radius of the round rod and as the third power of the thickness of the rectangular rod: it is greatly increased by a very small increase in the radius or thickness.

The lashes should have a good recovery from deformation. The eyelash units are subject to considerable handling as they may be used over again many times, and they should spring back to their proper shape as soon as they are in place. Resiliency is measured as a per cent recovery after the fiber has been stretched. If the recovery from elongation is good, the recovery from a bending deformation is usually good.

The lashes should be resistant to water. The water absorbtion, measured by the degree of swelling of the fiber when soaked in water, should be low so that a wetting of the lashes by tears, rain or swimming will not cause them to lose their stiffness or shape. The moisture regain, measured by the weight of water absorbed by the lashes when they are exposed to a humid atmosphere, should be low because the lashes get pretty well dried out by heat during their manufacture. If they have a tendency to pick up moisture, the lashes may change in shape or rigidity when exposed to changes in humidity.

Flame resistance is important since many women smoke cigarettes. Although almost any organic material, natural or synthetic, will burn to some extent when cut into fine shreds and placed in a flame, many materials will melt or shrivel into a less combustible form when exposed to heat.

It is desirable that the fibers be easily moldable to the proper degree of curl. Many of the eyelash units available using human hair, achieve the curl by coating the hairs with a lacquer which holds them in shape. This is considered less desirable than a built in curl because such a lacquer greatly increases the rigidity of the lash. Many of the synthetic fibers may be formed by heating them until they reach a softening temperature. Chemical treatments may be used to curl the fiber, treatments which cause the upper surface to contract or shrink, or which cause the under surface to expand or swell.

There should be no danger of coloring matter getting into the eye. Most fibers are readily dyed to the proper color, and the other fibers may be coated with a colored lacquer. All coloring materials must be safe to use in contact with the skin.

Specifications

A tentative set of specifications and descriptions were arrived at for fibers to be used as artificial eyelashes.

1. The fibers must be less flammable than hair. When exposed to heat, they should melt or shrivel into a less combustible form.

2. When soaked in water at 21°C. for 24 hours, the fiber should increase in volume less than 5 per cent.

3. The dried fiber should gain less than 5 per cent by weight of moisture when it is exposed to a relative humidity of 65 per cent at a temperature of 21°C.

4. The resiliency should be high. The recovery of the fiber should be over 90 per cent when tested in the following manner: stretched to a strain of 2 per cent with a loading rate of ten grams per denier per minute, for a period of thirty seconds, at 65 per cent relative humidity, followed by a recovery period of 60 seconds.

5. The resistance to bending should be high enough for it to hold its shape, but not so high that the fiber becomes a dangerously stiff bristle. With a fiber length of one centimeter, a force to deflect the end of the fiber a distance of one millimeter may be between 0.3 and 2.2 milligrams for a satisfactorily stiff lash. However, for maximum safety to the eye, the deflecting force should be less than 0.3 milligrams. These specifications may be met by a fiber with a U shaped cross-section. The U bend collapses when the deflection exceeds a certain critical value, and the resistance to bending at the point of the sharp bend drops suddenly from that of a U beam to that of a thin flat bar, a change which may be ten to one. The deflecting force for a human hair 80 microns thick is about 1.5 milligrams.

6. The width of the fiber should be between 125 and 225 microns. The thickness of the fiber, since it has very little effect on the appearance intensity, is chosen to give the proper resistance to bending. It will depend on the modulus of elasticity of the material, and on the shape of the cross-section of the fiber.

7. The fibers should be approximately uniform in width from base to tip. Although natural eyelash hairs taper to a point, tapered fibers do not give the best appearance. The fibers may even be wider near the tip if the maximum width does not exceed 225 microns.

8. The fibers should slant outward to make an angle of 40° to 50° with the base line.

9. The fiber should be plastic to the extent that it may be shaped into a permanent arc by such techniques as molding, differential shrinkage, or differential swelling of the upper and lower surfaces of the fiber.

The first material to come to mind for use as artificial eyelashes is human hair. An examination of the eyelashes available on the market today reveals that hair is used in the single lash hairs which are glued on individually, and in the type in which the hairs are looped over a transverse thread. Also in use are nylon and Saran fibers. The lash unit in which the hairs and base are cut out of the same sheet of plastic film is made of polyester film. The hair fibers have a cross section of a thin, flat rectangle curved a semitubular shape. It is claimed that this structure conforms most nearly with the ideal stiffness requirements.

It is to be expected that cosmetic chemists will be inspired by new materials to create newer and better eye cosmetics.

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FINAL ADMA MEETING

(*Continued from page 737*)

was designed for him and for his use. It seems ridiculous not to supply him with it.

"I am of the opinion that every new product announcement to physicians should carry a copy of the official product brochure for the first three mailings. Likewise, a copy of the official brochure should also accompany every mailing of a product sample to physicians. Similarly whenever there is a major change in an official product brochure, a copy should again be sent to physicians at least once.

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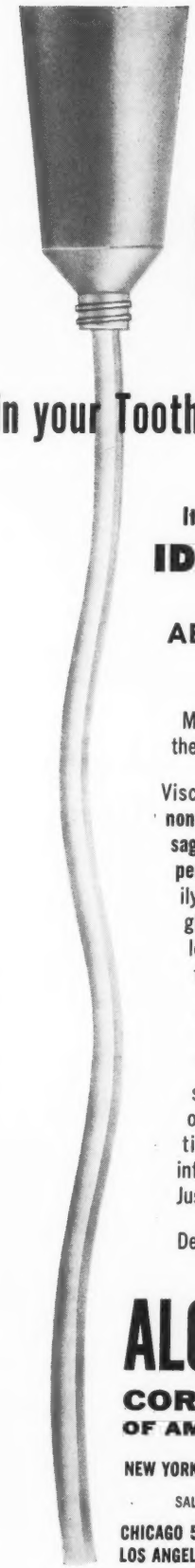
"It is our intention and desire to consult with the industry in working out the details of this program and I know that the Food and Drug Administration



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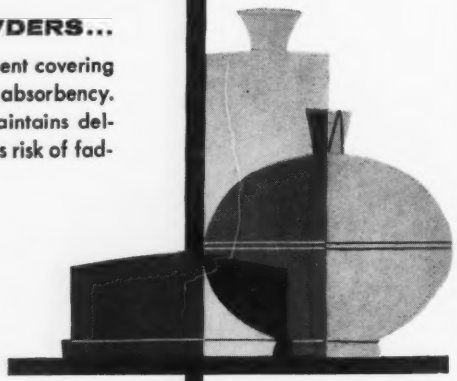

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Drug Trademarks

Drug names and trademarks have raised four major problems for the pharmaceutical industry, said Assistant Commissioner of Patents, Daphne Robert Leeds. In the first place, she asked, does the public interest in the products of the pharmaceutical transcend the private right to utilize product names as competitive tools?

"It is this public interest," she declared, "which gives us concern at all times, because the courts have described my official position as one of the guardianships of the public interest. Unlike most industries which ordinarily have well-defined and often single channels of distribution, your products 'cover the waterfront.'

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But under the patent law, she said, the Patent Office must decide "whether one trademark so resembles another mark previously registered or used, as to be likely to cause confusion, mistake or deception of purchasers."

"In making that determination we must, among other things, consider the specific nature of the products; the method of dispensing, i.e., over-the-counter or prescription, and the likelihood, if any, that this method might change; the probable effect on the consumer of confusion or mistake; the circumstances and conditions surrounding the purchases and sale of the product; the care exercised by the consumer in making the purchase; and the market practices of the industry."

The next two questions which must be answered by drug manufacturers, are:

Do the drug names which industry uses actually perform the function of trademarks identifying and distinguishing the products of one manufacturer from those of another, or do they merely provide a convenient common name for the products.

Is more to be gained goodwill-wise and reputation-wise by giving each product a specific name—or trademark—than by using an industry-wide common name and promoting the sale of the product under your house name?

The association at this meeting—the forty-eighth—approved dissolution of the association. This is similar to the action taken by the American Pharmaceutical Manufacturers Association at its meeting in April.

Thus the way is paved for the members of both these associations to become members of the Pharmaceutical Manufacturers Association which came into being on March 24 by incorporation in the State of Delaware. Thus the merger of the ADMA and the APMA will now become effective. The president of the PMA is George F. Smith, president of Johnson & Johnson.

PATCHOULY OIL

(Continued from page 739)

however, one of the few patchouly oils which are distilled by Europeans in the habitat of the plant. More known to the readers is the Seychelle patchouly oil from the very small island group north of Madagascar. The Seychelles are inhabited mainly by French settlers, althought British for centuries. The Seychelles patchouly oil is the largest outside the East Indies, quantitatively. The average production is about 5 to 10 tons per year. Among the credits, we must give the distillers in the Seychelle islands is the fact that they are very careful in using only patchouly stills for patchouly distillation. Cinnamon leaf oil and small quantities of eucalyptus citriodora is produced in these tiny islands, and contamination should seem very conceivable. As for example a few years ago, a European essential oil house received a drum of patchouly oil from a British distiller in Tanganyika, East Africa (experimental lot). The oil was of a very good quality, apart from a strange off-note in the "depart". Analysis showed 1.4 per cent aldehyde, calculated as $C_{10}H_{18}O$. Further investigation revealed, that the distiller had used his eucalyptus citriodra still for the patchouly, apparently without sufficient cleaning!

The cultivation of patchouly plants in a region where extraction installations are at hand, should immediately seem to imply certain advantages. Patchouly leaves can be extracted with benzene and yield from 5 to 6 per cent of a resinoid, which, in turn, yields 70 to 80 per cent of an alcohol soluble absolute. In other words, an absolute from resinoid of patchouly leaves could be produced in a yield of 3.5 to 4.5 per cent, which is considerably more than the yield of oil by distillation of the leaves (2.5 to 3 per cent). Those who have had an opportunity of smelling the absolute of patchouly will no doubt agree that this is a product which is worth more than the oil. So here is an idea for a profitable production of patchouly resinoid (or absolute) in the place of cultivation of the plant. The absolute, and also the resinoid, are free from the mustiness often encountered in distilled patchouly oils, and the fixative value of the resinoid, at least, is far superior to that of the oil.

This brings to mind the large number of European- and American-distilled patchouly oils of today's trade. One thing, they have in common is that their prices

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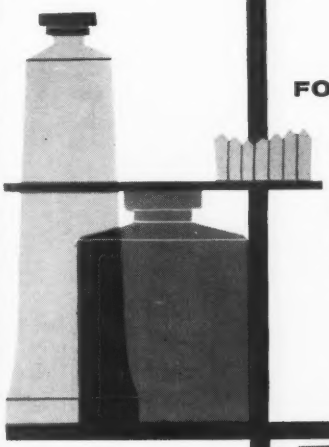

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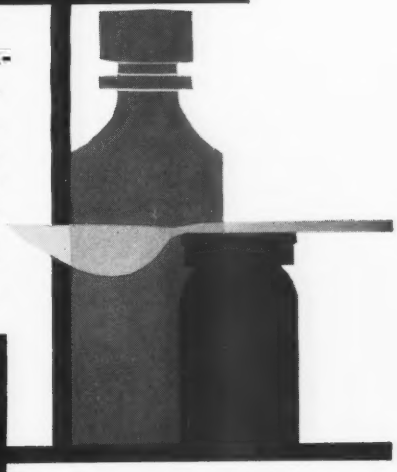

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are usually at least twice that of the native-distilled oil. In some cases, however, the European or American-distilled oils are so much superior that the mentioned premium is reasonable.

During my excursions with Roger Gomes, director of the SPPM in Nossi-Be, he explained to me about his earlier experiences in the Far East. Monsieur Gomes spent 22 years in Indochina and Malaya until the unhappy events in Indochina took a serious change in 1952. With a Colt .45 in one hand and his very attractive wife in the other, Gomes withdrew from his beautiful estate, leaving behind everything that they had built up during half a lifetime. But his experience nobody could take away from him, and that became his tremendous advantage when he settled down in Nossi-Be. Even the cultivation of patchouly was nothing new to Gomes. And that is probably why the Nossi-Be patchouly oil has distinguished itself among the post-war patchouly oils of commerce.

The patchouly plant, related to peppermint, is one or two feet high, a rather unimpressive plant, which does not have flowers when cultivated. Apart from the cultivation and harvesting, which have, as mentioned, been thoroughly described by Guenther, I would like to add a few comments on the distillation technique. The distillation of the patchlouly leaves often takes 24 hours in the native stills where the steam pressure is low and inconstant, while in more modern stills, such as those in Nossi-Be, the distillation can be brought to an end in less than half that time. Towards the end of distillation, it is advisable to increase the steam pressure slightly because the oil may be retained in the oil cells situated in the interior of the leaves. Even with adequate drying and/or fermentation before distillation, the leaves are able to withstand several hours of treatment with low-pressure steam, and stil have some unopened oil cells left. This is one source of "poor" patchouly oils.

Patchouly oil has a specific gravity very close to that of water, a fact that makes separation somewhat difficult. The longer the oil remains in contact with the distillation water the poorer becomes the odor of the oil. A special trick, which may be known and used in Europe, particularly in France, where generally better patchouly oils are produced from imported leaf material, was revealed to me in Nossi-Be, although in another connection. I shall describe this in more detail below. The "trick" is applicable to patchouly oil.

Among other, perhaps, very well-known causes of trouble in obtaining uniform qualities of patchouly oil, is aging. Not only the leaves themselves change and generally improve in odor by aging, but also the oil, even when distilled from too fresh leaf material, may improve considerably during one or two years of aging.

The chemical composition of patchouly oil is not too well known although detailed investigations were

carried out generations ago. More than 50 years ago, Schimmel claimed, that 97 per cent of the patchouly oil was made up of constituents which had little or no influence upon the characteristic odor of the oil. The identity of the "mysterious" 3 per cent has not yet been fully revealed. According to such information, we would immediately say: "Let us get hold of these 3 per cent and forget about the 97 percent!" And once more we face the surprising fact that in nature, but *not* in man-made compounds, some "key-materials" in extremely small concentrations produce enormous effects. Man-made isolates, representing the bulk of an oil, often are of little odor value, and if we try to add some "key-material" in the calculated percentage we will usually become extremely discouraged.

Patchouly alcohol, supposed to constitute about 50 per cent of patchouly oil, can be catalystically converted into Guajazulene. This proved the theory, that patchouly alcohol belongs to the saturated, tertiary, tricyclic alcohols (it contains a seven-membered carbon-ring). Dehydrating leads to the sesquiterpene patchoulen, which is present in patchouly oil in the amount of 40 to 45 per cent. This sesquiterpene can be oxidized to homocamphoric acid, which explains the olfactic relationship between patchouly oil and camphor.

About the "key materials" in patchouly oil, it should be mentioned that a large number of tropical labiates contain very small, but important, amounts of alkaloid-like compounds, and certain reactions point toward the possibility that patchouly oil also does. Again, here, I will refer to the following report on an "unknown" tropical cousin of the patchouly —the manevoro:

All over East Africa and the tropical regions we can find labiates with odors, similar to the patchouly in type. One plant which caught my special interest when I "roamed" the Madagascan bush and the jungles in the surrounding islands, was the "crocodile" plant. The plant grows wild in Madagascar and Nossi-Be, but whether it is common in other regions, I do not know. Ihave not heard of the plant being exploited for production of perfume oil elsewhere. Manevoro means "crocodile plant" or "crocodile herb" in the Madagascan dialects, and the only relation to crocodiles that I can think of is that the plant prefers depressions in the deep forest, and that its leaves are dented. It does not grow in swamps, but prefers the shady forests which are abundant in certain areas of Northeastern Madagascar, etc. The leaves are lanceolate, dented, haired, but do not burn (as do certainly some of these tropical species of labiates!). When rubbed between the fingers they give off a most unpleasant, sickly odor, which reminds of the "muriatic" botanical drugs of the solanace-family: hyoscyamus, strophantus, belladonna, tobacco, etc.). No one would immediately think of distilling a perfume oil from such leaves. But here we reach our point: "key-material". The plant is—as far as I could ascer-

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tain—a close relative to patchouly, although I may be wrong on this point. The odor of manevoro leaves has a typical alkaloid-like, or amine-like character. This type of odor (or note) is occasionally found in patchouly oil, and particularly in certain fractions of this oil.

Cultivation of manevoro has been tried, but with poor results. Therefore, the leaves of the wildgrowing plants are distilled with steam. The receptacle contains petroleum ether, and a mechanical stirrer can be applied when necessary. The petroleum ether has two missions: 1) the oil suffers considerably from contact with water over a long period (similar to patchouly), and 2) the oil has a specific gravity of 0.998 at 15°C. Accordingly, a quick separation takes place in the receptacle. After exhaustion of the leaf material, the petroleum ether extract is evaporated, and the residual oil is washed with alcohol, this solution filtered, and evaporated under vacuum, until the alcohol is off the oil. The annual production of manevoro oil is in the neighborhood of 50 lbs.

The above "trick" with petroleum ether is certainly nothing new, but it is rarely in use, and I can imagine, that it should be useful for patchouly oil distillation too, e.g. in Europe and the U.S., where ample vacuum installations are at hand. Among the many other reasons why the European and American-distilled patchouly oils are generally superior to the locally-distilled oils, I can mention the aging of the leaves, which is an advantage to the product, although certain notes are lost during the long transportation under "hot" circumstances.

The odor of manevoro oil has only few notes in common with patchouly. The tenacity of manevoro almost equals that of a European-distilled patchouly oil. At first, manevoro may remind you of atlas cedar, patchouly, orris, costus, clary sage concrete, quite "dusty-dry". Later, the odor becomes fuller, sweeter, and presents a unique bouquet, power and tenacity. Used in minute quantities in colognes, chypres or oriental bouquets, it imparts inimitable and quite intriguing notes, but overdosage is easy, and even ½ per cent may, in certain cases, ruin a perfume compound.

As far as I could find out, manevoro oil could be produced in far larger quantities. The present price is extremely reasonable compared to the power, tenacity, and special effects of the oil. Manevoro is no substitute for patchouly, and will probably never become "another" patchouly type, but it may find its place on the shelf among a number of distinguished and rare perfume materials for "special effects".

As a summary, I did not solve the question: "What has happened to patchouly oil?". But I do not write these articles and reports to have a diary in print. From time to time, I have the definite pleasure of receiving—idectly or indirectly—a reaction from one or more readers, each one an expert in his field. It is mainly to obtain such reactions— to start a "chain

reaction" among those who know better—that I write, and sometimes even write things, that I am not quite sure of myself. In research, you can often solve more questions and problems through mistakes (which you become aware of), than by a series of successful experiments.

WASHINGTON AND THE DRUG INDUSTRY

(*Continued from page 741*)

pharmacist, physician, drug wholesaler, or manufacturer should ever forget that this is of great concern to him.

Let us go back to antibiotic certification for a moment, for this provides a wonderful illustration of what happens when the federal government has the legal right to set drug standards and prescribe methods of analysis. I looked at the F.D.A. compilation of tests and standards for antibiotics the other day. These impressive volumes, for a few antibiotics only, are thicker than the U.S.P. and N.F. combined. Yet the latter compendia give the necessary information for all other official drugs, including several uncertified antibiotics. I predict that if the government is ever given powers over all drugs similar to those covering the five certifiable antibiotics and their derivatives, the material now adequately contained within the conservative covers of the U.S.P. and N.F. would be expanded to exceed Dr. Eliot's Five Foot Shelf.

Government Research

The magnitude of federal medical research support is tremendous. Prior to World War II, the U. S. government financed less than one-tenth as much medical research as it does today. In 1957, the pharmaceutical industry spent $127,000,000 for medical research, including drug development. The National Institutes of Health budget was something over $200,000,000, and other government agencies spent substantial amounts on medical research projects. Although the universities, the states, and private foundations are supporting medical research generously, it is safe to conclude that more than one-half of all medical research in the United States today is financed in some way by the federal government.

The power of the purse carries with it the power to control. So far, there has been little tendency on the part of the National Institutes of Health, which is the leading medical research agency, to direct the course of the research it finances. It is the firm policy of the N.I.H. to exercise a minimum of governmental control, and in large measure the laws under which the agency operates recognize this principle.

Another policy of N.I.H. is to favor basic research, feeling that applied research and drug development are the proper functions of private organizations. It is important that this distinction be maintained, for two reasons. First, industrial research must necessarily emphasize the applied or developmental type. The

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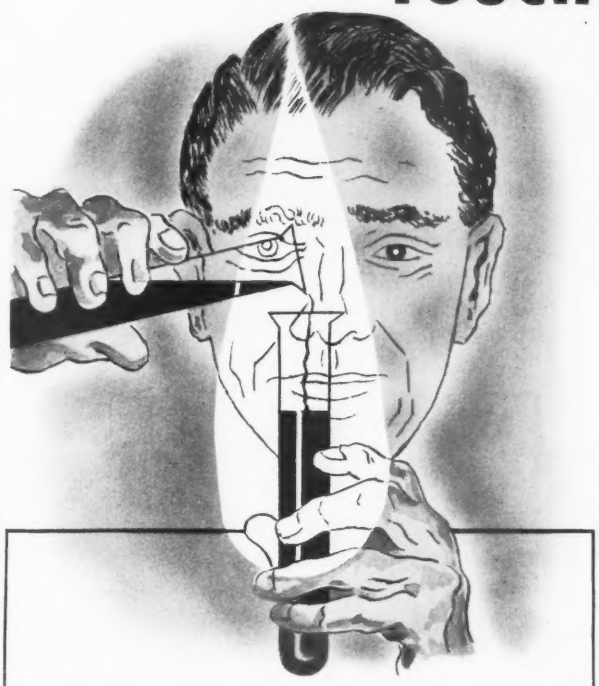

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drug industry carries out quite a lot of basic research, but it cannot justify undue emphasis upon search for basic facts without known commercial application. Therefore, if the government does not provide the necessary emphasis upon basic research, this vital factor will be neglected in the nation's total effort.

Second, applied research has for its main goal the development of new products, and if the government throws its tremendous monetary weight into applied research in a specific medical area, industry must inevitably withdraw from that field. The chances of making an industrial invention which will pay for the research expenditure become quite remote when the government takes over the financing of most of the projects. Consequently, the healthy competition which comes from applied research supported by many independent sponsors disappears, and the commercial impetus to bring out a worthy new product is greatly diminished.

When one considers these complicated factors, it becomes obvious that the proper balance is reached if the government's program emphasizes basic research. Privately supported programs can stress applied research and development, but should include as much sponsorship of basic projects as possible.

Until the past two or three years, this was the case generally, in the medical research field. The trend toward government sponsorship of drug development began with the project in cancer chemotherapy. In an attempt to find drugs with anti-tumor activity, Congress directed N.I.H. to begin a comprehensive screening and testing program. A Cancer Chemotherapy National Service Center was established by N.I.H. to carry out this applied research project, and I think most of you are familiar with its operations.

The drug industry is cooperating fully with the Service Center, and there are even some government-industry grant programs under way. Because no satisfactory drugs for the cure of cancer are known today, and because there had been relatively little industrial research in that field, the net result of the government's venture in finding anti-tumor drugs has been to increase the total research effort. These same conclusions, however, would not fit many other medical areas. The cancer chemotherapy program definitely should not be used as a pattern to be applied to fields where good drugs already exist, and where intensive company research is going on.

Many members of Congress do not understand this last point, and in fact they are being misled at times by spokesmen for some of the so-called "citizens' groups" interested in medical research. These people may be well-meaning, but they often advocate projects which, if adopted, would decrease the effectiveness of the total research effort, and would eventually centralize drug development in the federal government's hands.

Governmental drug development programs have been, or are being, proposed in the mental health

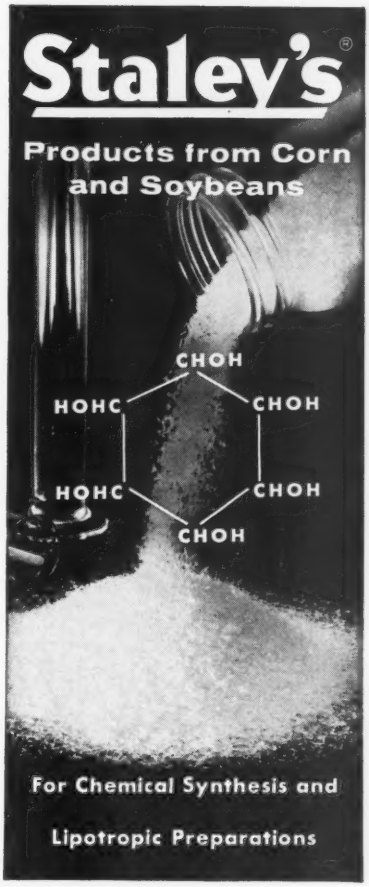
field, in heart disease, and in virology, to name only a few of the medical areas involved. The technical facts which provide some justification for the program in anti-cancer drug development certainly do not apply here. For example, there are good tranquilizing drugs on the market today, and private sources are supporting many active drug development and drug screening projects in the mental health field. Similarly, industrial and other private research organizations are making great strides in treating heart ailments, metabolic diseases, glandular disorders, virus infections, and most other illnesses. The support the government gives to research in these medical categories should be directed toward study of basic mechanisms, causes of illness, diagnostic techniques, and all those things which increase our store of fundamental knowledge.

Some of the spokesmen for the so-called "citizens' groups," which I recently referred to, are really professional lobbyists. Their proposals are often sound, of course, for they usually request adequate appropriations for N.I.H. to support basic medical research. It is when they urge that Congress direct N.I.H. to spend specific sums for drug development and comparative drug evaluation in medical fields where good drugs already exist, that their efforts could be really harmful to ultimate medical progress.

Well, what can one do to correct this situation? It isn't a simple problem. I often wince when I contribute to this medical fund or to that one, realizing that a small percentage of my own contribution will go to cover the expenses of someone advocating an unwise program for the government to follow. Individuals on the governing boards of these groups should be contacted and kept informed of what their agents are doing. The free-wheeling and self-starting spokesmen for these organizations should be required to clear their proposed statements with their supporters before being presented to the Congress.

Another thing which knowledgeable people in the pharmaceutical field can do is to make sure that their Senators and Congressmen are told all of the facts. Members of Congress cannot in themselves be authorities on everything, and they must depend upon the opinions of experts. They do not necessarily realize how important it is for the federal government to give N.I.H. a free hand to support as much basic research as its scientists feel desirable. Nor would they be likely to think about the adverse effects of having the government take over the drug development functions of industry, unless it is pointed out to them.

I have attempted to describe the three areas where the government has a decided and specific impact upon the drug industry. In closing, I would like to point out that there is a common thread running through all these problems. It is this: there is a proper place in the pharmaceutical field for the efforts of government, and there is a proper place for the efforts



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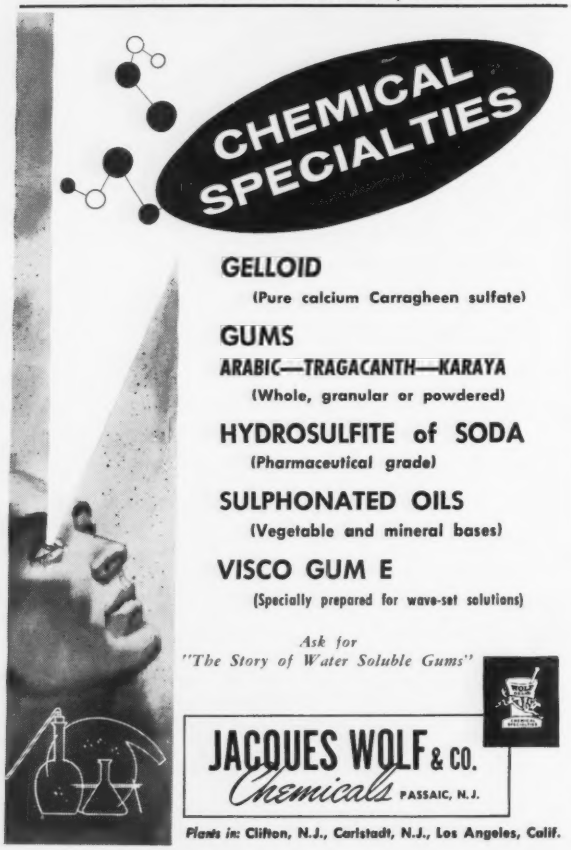

of private citizens. Each can strengthen the other; neither one need cause harm to the other. When the efforts of government strengthen those of its citizens, the nation as a whole is made stronger. Without doubt this was the intention of those who set forth the basic principles in our Constitution more than 165 years ago; it was the intention of those who recognized the responsibilities of private citizens in manufacturing and distributing drugs, and in establishing standards for them, in the Food and Drugs Act fifty years ago; and it was the intention of those who saw the need for more support of basic medical research in setting up the first National Institute of Health about twenty years ago.

These wise intentions should not be overlooked. It should be our purpose today, and our responsibility as citizens, to see that a healthy balance is maintained between the functions of government and those of private organizations in all facets of medicine and pharmacy. The tremendous amounts of money which the federal government has to spend should be carefully directed in its procurement of drugs, its regulatory activities, and its support of medical research. It is always the citizen's responsibility to chart the government's course.

MATCHING PERFUMERY

(Continued from page 744)

with the presence of aldehydes, confirms this. A closer inspection of a fresh dip of the fragrance oil on a test blotter shows that a rose effect and a jasmin are involved, with a distinct possibility of a muguet composition or a muguet fragment of aromatic chemicals, being used.

The basic group employed in the original Crepe de Chine is Chypre. Therefore the application of Step #2 will start at this point. Referring to the various formulas for Chypre in the Chapter X (Lavender-Fougere-Chypre Group) it is seen that bergamot and oak moss are predominant materials in making up a Chypre composition. The presence of these materials has already been confirmed in Step #1, so the composition of the match will be started as follows:

CREPE DE CHINE TYPE E.056

100	Oil bergamot Natural
100	Oak Moss "Green" (Polak Frutal)
120	Linalyl acetate

Linalyl acetate possesses a fruity note quite similar to oil of bergamot. It is used here to body and fortify the bergamot, and produce a balance between it and the oak moss.

The progress of the development of the match mixture is observed by comparison with the original sample which was to be matched. Separate blotters are dipped in each product, and comparatively examined under the nose. Prolonged smelling of either

paper should be avoided as much as possible, since this produces a kind of numbing sensation that temporarily interferes with the accuracy of odor comparison. In the subsequent discussion, the word "comparison" will be used to indicate the method of examination described in this paragraph, for the sake of brevity.

In the above mixture, the bergamot note is derived from the combination of natural bergamot oil (1) and the fortifier, linalyl acetate. It is apparent on comparison that this bergamot note needs variations for additional "color." So, these additions are made:

50	Oil lemon Italian
10	Oil bitter orange (Fritzsche)
40	Linalool

The lemon oil gives a fresher citrus touch. The bitter orange gives a "zesty" orange peel effect. The linalool serves as the blender to bring these new materials in harmony with the first group.

These additions were not arrived at as easily as they were written. They were reached by a series of experimental additions of small quantities that were juggled back and forth until a satisfactory position was attained. This "juggling" technique is the method used to arrive at the various figures subsequently shown for the formula development.

The mixture produces a base approximating the Chypre class. It is a skeleton fragrance and must be greatly amplified to resemble the product being matched. The need for this amplification leads to the next step, the "filling in" of the skeleton base. It has already been shown qualitatively that the ionones exist in the original match material. A comparison verifies their desirability so the following additions were worked out:

8	Methyl ionone
6	Alpha ionone

A flowery greenness reminiscent of gardenia is identified on comparison and is reproduced by these additions:

8	Amyl cinnamic aldehyde
24	Styrallyl acetate

Styrallyl acetate has been emphasized because this material is almost traditional in Chypre types. The amyl cinnamic aldehyde rounds off the comparative harshness of the styrallyl acetate.

A touch of Petitgrain was noted during the "dry-out" operation. In comparison however, this note seems to be a litle sweeter than would be expected if petitgrain alone were used. Therefore an adjustment was made as follows to produce this character.

16	Oil petitgrain South American
9	Yara yara

(*Continued on page 826*)

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The yara yara is intensely sweet but still in the neroli-petitgrain class, and contributes the degree of sweetness desired.

The possibility of a Muguet specialty being used in this product was indicated in the previous examination. However, the decision was made to use a Muguet "fragment" rather than an actual specialty, for reasons of simplicity, since the Muguet effect in the comparison was not too pronounced.

25	Rhodinol
25	Octadienol 1453
15	Benzyl acetate
10	Civettiane

Rhodinol produces the smooth rose sweetness that is so characteristic of Muguet. Octadienol is a single, new chemical, which has the most pronounced Muguet characteristic of any individual chemical. It has powerful tones, of rose, lily. The benzyl acetate gives the lifting Jasmin sweetness. The Civettiane provides the indoloid-like note.

A comparison indicates that there is a kind of precious wood effect woven through the original fragrance that blends the floral and citrus notes into a harmonious whole. For this work the two "woody" alcohols were used:

30	Vetiverol
40	Sandalwood oil natural

The vetiverol was chosen in preference to the vetivert oil, since it is softer and sweeter and thus more suitable for blending work. Sandalwood oil is of course comparatively mild and smooth. If desired, santalol could be used instead, since this aromatic is the alcohol isolated from the natural oil. However it is not felt that this higher priced santalol is justified in this situation.

Spice notes are next on the agenda. A comparison shows that warm spice effects are desirable to recreate the "life" of the original fragrance in the match. A threefold application is used:

6	Eugenol
6	Isoeugenol
6	Oil nutmeg natural

The blend of eugenol and iso-eugenol produces a touch of the Carnation "pink" flower that is very livening. The nutmeg contributes a spice note that is peculiarly warm because of the presence of terpenes in its oil. The use of this spice bouquet represents the kind of decision that must be constantly made by the perfumer in his match work. There is an excellent chance that the man who designed the original fragrance used a carnation specialty of some kind. Perhaps it was his own, or perhaps one of the famous bases, of which there are many. The little base

touches only the highlights of such a spice effect. It is not completely satisfactory. The matching perfumer can set up a side experiment to create a specialty spice base that will give a better effect in the match composition. Nevertheless, no matter how much effort he puts into the project, he will not be able to achieve perfection. The decision the perfumer must make is how far he should go in his striving for perfection. If the effect under consideration plays a substantial part in the fragrance being matched, then he is justified in a side excursion to create a specialty base. Practical experience however shows that the simple "fragmentation" bases as the spice and Muguet will suffice in the majority of instances. The blunt fact is that the ultimate consumer does not possess a sufficiently acute judgment to recognize subtleties of fragrance well enough to justify straining for perfection. The perfumer being by nature something of a perfectionist, he must discipline himself on this point to avoid wasting time.

The match has now progressed to the stage where the broader aspects may be considered. Comparison shows that although the main points have been outlined something is lacking, best expressed as a generalized or non-specific floweriness. To satisfy this situation the following addition is made:

50 Hydroxycitronellal
5 "Cumin" ketone (Verona)

Hydroxycitronellal is traditionally used for this flowering purpose. The "Cumin" ketone is a comparatively new chemical, very powerful, which produces another nuance in conjunction with the hydroxycitronellal that is strikingly effective. The "broad" spectrum" character of this "Cumin" ketone is such that it should be kept in mind during all matchwork for its valuable utility.

A comparison indicates that a contrasting herbal effect is desirable to accentuate the moss and bergamot. To achieve this the following additions were made:

2 Oil estragon, French
4 Oil cardamon

The estragon gives a bittersweet green note reminiscent of anise. The cardamon gives a bitter peppery touch. Incidentally cardamon is often used in traces in lily-of-the-valley fragrances, and its origin in this match job may have been through a Muguet composition.

Completing the Chypre picture are these materials:

50 Rose otto type E.024
10 Ylang absolute (*Cammili-LaLoue*)
40 Astrotone BR 100%
10 "Phantolid" (Polak Frutal)

(*Continued on page 828*)

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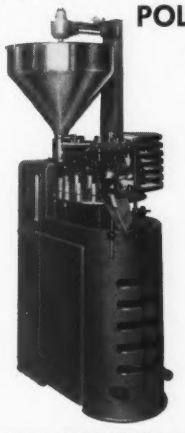

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Two steps remain to complete the match job: the production of the sweet note often described as "powdery" and the aldehydic note that is so characteristic of Crepe de Chines.

There are a number of specialties on the market showing the "powdery" effect, and range from relatively deep amber tones to intense, candy-like sweetness. For simplicity however, a "fragmentation" base is used as follows:

24	Musk ketone
24	Musk xylol
18	Musk ambrette
18	Coumarin
12	Ethyl vanillin

In the experimental introduction of this base the ratio of the materials was 4-4-3-3-2. It had to be expanded six times before a sufficient "powdery" effect was created to satisfy a comparison. Ethyl vanillin is preferentially used here because it is more flowery than vanillin.

Now comes the final critical step, the introduction of the aldehydes that convert the Chypre into a Crepe de Chine. The comparison shows that the aldehyde effect is very fancy and difficult to separate into its possible constituents. Therefore, from past experience, it is assumed that an aldehyde bouquet of some sort was used in the original fragrance. The construction of an aldehyde specialty is an exasperating and time-consuming job because of the intensity and deceptiveness of the aldehydes. Therefore it was decided to try a "fragmentation" base instead.

Aldehyde C-11 is traditionally the aldehyde of preference in Crepe de Chine. However our "dry-out" indicated that aldehyde C-12 MNA might also be present. Since the rose touch seemed to be stronger and sweeter than would be generated by aldehyde C-11, citronellyl oxy-acetaldehyde was considered as a possible material. The "Veronol" aldehyde was used as matter of principle to try and create as much "bouquet" effect as possible in this limited base. "Veronol" has the most versatile odor of the aldehyde group, representing several aldehydes in a sort of tight bouquet, even though it is a single chemical body.

6	Citronellyl oxy-acetaldehyde
12	Aldehyde C-12 MNA 10% in DEP
12	Aldehyde C-11 10% in DEP
6	"Veronol" aldehyde 10% in DEP

The adjustment of the aldehyde notes must be done very carefully. Some people are insensitive to them and require a relatively high dosage for full appreciation. Others are supersensitive and require a lessening of the dosage. This aldehyde appreciation is a highly personalized matter and the perfumer should make every effort to appraise his customer's reaction before presenting a match containing aldehydes. The sale of his match can easily be made or broken on his understanding of this factor.

When the match has been completed to the perfumer's satisfaction his final move is to check over the formula that has been established and be sure that it has sufficient fixation and that the "wearability" factor has been taken care of.

In this particular instance, fixation is ample. The Astrotone and Phantolid plus the large amounts of crystals and the aldehydes all contribute to the total fixation. "Wearability" is taken care of through the Astrotone and Civettiane.

CAUTION

Working too long and continuously on a fragrance match often produces a kind of hypnosis leading to a deceptive evaluation of progress. Apparently this is due to a combination of nasal and mental saturation. Often a perfumer is tempted to work long and hard on a certain match, and feels that he has made progress. Next day when he checks his work he is dismayed to find that he has gone far off the trail. In matching, therefore, the jobs should be varied by rotation. At least two (and preferably three) matches should be worked on simultaneously to break the monotony.

THE PERFUMER'S "ORGAN"

Since there is a tremendous amount of exploratory work to be done in a satisfactory match, ways and means are sought to expedite this tedious and time-consuming effort. One of these is the so-called "perfumer's organ."

Briefly, this consists of a multi-tiered shelf, stacked with uniformly sized bottles containing 10 per cent solutions of the known aromatic materials. The solvent is usually diethyl phthalate. For convenience, the bottles are alphabetically arranged.

These bottles are equipped with a bulb, tube and dropping tip, built into the stopper. The tip is fashioned with a standardized orifice so that the size of the drops obtained will be reasonably uniform from bottle to bottle. This style of container is readily available from many makers of medicinal glassware.

With this kind of "organ" established, the perfumer is able to make rapid drop-wise experiments to "rough in" a fragrance or match idea. He works by considering each drop as one part by weight in his formula. This is not absolutely correct, but is an approximation within the accuracy of the size of the drops themselves. To contain these experiments, it is

very convenient to use the common bar-glass which is shaped in the form of a miniature brandy "snifter." The special structure of this type of glass permits ready and accurate examination of the odor of the material in it, since it was originally designed for the appreciation of the aroma of brandy.

In practice, the perfumer adds various aromatic materials, dropwise, from their various bottles. He smells his mixture by gently swirling the "snifter" glass and carefully applying his nose just above the open face. He keeps a systematic record of the drops and materials used. Since the various aromatics are diluted with diethyl phthalate, it is not a strain on the nose to make constant observation of the progress of the mixture in the glass. If an error or undesirable addition is made, it is only a matter of less than a minute to pick up a fresh glass and re-establish the mixture to the desired point. The speed and convenience of the "organ" and its dropwise procedure, must be tried to be appreciated.

When a satisfactory mixture has been created in the glass, the drops are totalled into a formula. This formula is then made up using the "straight" aromatic materials, and the match job continued to its completion.

The usefulness of the "perfumer's organ" is comparable to the artist's procedure of making a pencil drawing to serve as a guide for the final oil painting. It serves to expedite either a creative or match job, particularly the latter, and conserves aromatic material, and the perfumer's time. The conservation factor is important if expensive floral absolutes are involved.

Conclusion

The beginner must clearly understand two points concerning match work.

First, the illustration of a match job shown seems smooth and easy. It is far from that. A complete (and the word is really "complete") mastery of fundamental data and techniques is necessary before the intricate recognition of materials and group effects can be made. Coupled with this, there must be developed a temperament of infinite patience, to work out the various shading needed to give finish to a match. It takes time, hard application, patience and experience to become even a reasonably good matcher.

Second, the degree of perfection obtainable in other fields (as for example color matching) is not possible in fragrance work. If it were possible, the fragrances as we know them today, could not exist. The moment a famous and costly fragrance was developed and appeared on the market, it would be immediately matched and its originality and exclusiveness destroyed by relentless exploitation of low priced matches. However, many famous perfumes have been on the market for over 20 years, and have often been simulated, but never with the degree of perfection necessary to displace them in public acceptance.

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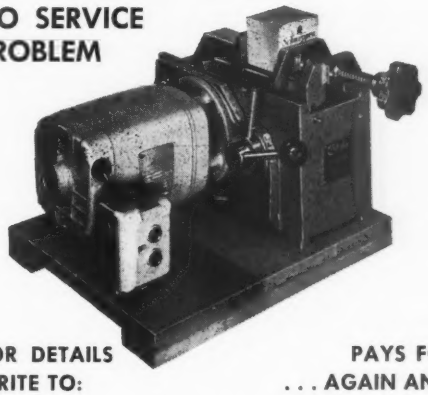

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(*Continued from page 765*)

new language teaches for the first time that the structural formula of the mercaptan molecule, as well as its molecular weight, has an important bearing upon waving effectiveness. The defendant, however, urged in the 710 proceedings that 710 also taught the importance of structural formula, as well as molecular weight. I concur in the master's analysis that:

> "In 323 the inventor simply notes, as he did in 710, that waving effectiveness is related to molecular weight especially where the increase in weight results from the addition of a polar group. The only difference between the two specifications is the inclusion of the polar alkaline group as inducing this phenomenon in addition to the polar acidic group originally disclosed."[15]

The claims of 323, although limited to a smaller class of mercaptans, are virtually identical to the claims of 710. The master's findings on this point are unassailable.

> "Thus, the broadest claims of 323 limit the mercaptan concentration range from 'about 2 per cent to 10 per cent', whereas in 710, the concentration range is from about 1 per cent to 10 per cent. In both instances, the concentration limits are derived from the examples set forth in the specifications. Likewise, the 323 claims do not contain any limitation with respect to molecular weight 121, which was found in the 710 claims; inasmuch as all species claimed in 323 are below molecular weight 121, such a limitation would of course be superfluous.

---

than cysteine (molecular weight 122) which is molecularly heavier and contains the polar carboxyl group in addition to the polar amino group."

In 323 this paragraph has been rewritten as follows:

> "I have also discovered that as the molecular weight increases, the mercapto-alkanoic acids become less affective as waving agents, particularly if the increase is due to a polar acid group or to a polar alkaline group. For example, in the homologous series of simple mercapto-alkanoic acids, mercapto-acetic acid is more effective than mercapto-propionic acid which in turn is more effective than mercapto-butyric acid; and the simple mercapto-alkanoic acid, mercapto-hexanoic acid, is far more effective than the dicarboxylic acid, thiomalic acid, although these two mercaptans have almost identical molecular weights; and mercapto-butyric acid is far for [sic] efficient as a waving agent than cysteine which has almost the same molecular weight but contains the polar alkaline group, the amino group, in addition to the polar carboxyl group."

[15] 1956 Master's Report 9.

> "Further, some of the claims of 323 (e.g. 1, 2 and 13) are limited to the use of ammonium hydroxide as a base, a limitation nowhere found in the claims of 710, although ammonium hydroxide was there used in the disclosed examples. However, the majority of 323's claims specify a base having a dissociation constant of less than 5 x 10^{-3}, a limitation also found in 710. Some 323 claims (e.g., 20, 24 and 25) require an alkaline material having a dissociation constant of about 10^{-5}. This limitation, too, is to be found in some 710 claims. (e.g., 10 and 11).
>
> "The pH ranges of 323 are substantially the same as those found in 710. Thus, we find the preferred commercial range 'from about 9.2 to not higher than pH 9.5' in claims 3, 10, 12, and 16 (compare, e.g., claim 3 of 710). In those claims containing the adjustment clause (e.g., 4-7, 8, 9, 15), the range is 'higher than pH 7 and not higher than pH 9.5'. The only new pH is to be found in claim 19 where it is stated to be 'about 9'. This claim, however, appears to have been framed by the examiner for the interference proceeding.
>
> "In sum, the claims of 323 follow the teachings of the specifications as to pH, base and concentration in precisely the same manner as those in 710."[16]

Since the "critical factors disclosed in 323 are identical to those disclosed in 710, if 323 is a criticality invention it must necessarily be invalid for these factors were held to be non-critical in fact in the 710 action.[17] The defendant was therefore constrained to maintain in this proceeding that invention in 323 does not depend upon criticality but rather upon the discovery of new and useful compositions of matter for permanent waving—i.e. that 323 is a species patent. It was similarly contended before the Court of Appeals in the 710 case, that 710 was for a new combination of matter—mercaptans having a molecular weight less than 121.[18] The contention was of no avail to the defendant in that action and was rejected by the master in this proceeding.

> "In 323, as in 710, McDonough discloses and claims not a species invention, but the same criticality invention which he disclosed and claimed in 710 and which was found wanting in the prior proceeding."[19]

The evidence supporting the master's conclusion

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[16] 1956 Master's Report 10, 11.

[17] In fact, some of the tests relating to criticality in the 710 proceedings were performed with thioglycolic acid. See 1954 Master's Report 35.

[18] See Plaintiffs' Brief 17; Plaintiffs' Appendix 461-62. The molecular weight limitation was designed to avoid the Speakman patent which disclosed a mercaptan, cysteine hydrochloride, which has a molecular weight of 121.

[19] 1956 Master's Report 14.

is overwhelming. Not only did the defendant contend before the Patent Office that the patent should be granted because of the discovery of critical factors,[20] but there is every indication that the patent was eventually issued on this very basis.[21] The master correctly disposed of the defendant's contention as follows:

"Having sought issuance of the patent on the ground of a 'criticality' invention, the defendant cannot change horses in midstream. It will not do to urge, as the defendant does, that the patent

---

[20] The defendant submitted the same Goldrick, Snell and Berdick affidavits in support of 323 as had been used to establish a criticality invention in 710. It also stated its position as to patentability of 323 before the Patent Office as follows:

"Our basic position here is that the invention of the present case constituted the discovery of four things which, combined together, give a waving solution which is better than anything in the prior art as a matter of kind rather than of degree.

The four factors constituting the invention are the discovery and selective combination of:

(1) a highly critical and restrictive pH range;

(2) a critical and relatively very low mercaptan concentration range;

(3) bases of certain critical and highly important characteristics; and

(4) a specific type of mercaptan.

"The present application is devoted to covering one highly effective subgroup of mercaptans in combination with the other three factors listed.

"The applicant discovered that mercaptans do not work on the high pH basis emphasized by Speakman."

* * *

"In effect applicant's discovery of this critical range of the pH control for mercaptans is a basic ground for allowing patent claims thereon. The law is quite uniform in supporting the contention that the discovery of the critical range over other ranges or within a broad range is clearly patentable."

[21] The Board of Patent Interferences, in awarding priority of invention to McDonough over Martin stated:

"No one reading the said Martin specification, not even one skilled in the art, would, in our opinion, validly obtain any impression that a pH between 7 and 9.5 in relation to the required ingredients, *the very heart of the invention*, was an agency in this process. * * * Consciousness of this *critical central concept and main guiding factor upon which patentability depended* and a clear teaching thereof is a minimum consideration for finding supporting disclosure for the courts."

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might have been issued by the Patent Office on some other ground; such a contention is not only unsound in law, but in fact as well."[22]

The finding of non-criticality in fact in the 710 proceeding compels a holding that 323 is invalid.

The findings with regard to the invalidity of 710 because of lack of invention over prior art are equally binding upon the defendant in this proceeding. Since the 323 invention is based upon criticality, defendant's contention that it is entitled to a pre-filing invention date must be rejected as it was in the 710 litigation. Even if the invention rests, as the defendant contends at one point, upon the disclosure of the importance of the structural formula of mercaptan molecules and the value of polar acidic mercaptans, the 710 findings clearly indicate that the defendant had not made such a discovery until after the filing date of the 710 application.[23] Moreover, even if invention is based upon the "discovery of a new composition of matter," and even if the de fendant were entitled to a pre-filing date for 323, it is difficult to see how the defendant could avoid Speakman's Canadian Patent No. 365,290 and the depilatory art in which the use of thioglycolic acid is specifically disclosed. If 323 is not entitled to a pre-filing date, even if it were for a new composition of matter, the Vago article of 1937 specifically referring to thioglycolic acid, and the Grant, Reed and Willat reductions of thioglycolic acid to practice, would prove fatal.

On the further ground of indefiniteness in the statement of the claims, the holding in 710 requires a finding that 323 is invalid. As the master found:

> "Practically all of the expressions to which exception was taken in 710 are to be found in the claims of 323. Thus one of the expressions singled out by the Court of Appeals was the concentration limit of 'about six per cent' found in claim 18 of 710. The same expression appears in claims 2, 4, 5, 6, 7, 9, 10, 12, 13, 16, 17, 19, 23 and 25 of 323.

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[22] 1956 Master's Report 16, 17.

[23] Thus, the 710 application and patent taught that thioglycolic acid was not a particularly effective mercaptan. The 1954 Master's Report at pages 42-43 detail McDonough's experiments with thioglycolic acid in 1941. They were marked by poor results. "McDonough thereupon abandoned the use of thioglycolic acid, except for a few experiments which seemed to confirm his previous disappointing results with this mercaptan." At page 32 of the 1954 Report, the master stated: "Moreover, it must be remembered that McDonough—for all of his experimentation—arrived at the conclusion that thioglycolic acid, now the only mercaptan used in permanent waving —was not as satisfactory for waving as glyceryl monomercaptan, which has practically disappeared from commercial use."

In its new context the expression imports no more certainty with respect to the limits of the claims than it did in its old. Actually, every statement of mercaptan concentration in the claims of 323 is prefaced by the same qualifying language which was found objectionable in 710.

"The Court of Appeals likewise found that the statement of the pH range, 'from about 9.2 to not higher than 9.5', in the claims of 710 was fatally ambiguous. Precisely the same formulation appears in 17 of the 25 claims in suit."[24]

I fully concur with the master's conclusion that, "for the purposes of this proceeding, 323 must be deemed invalid by virtue of the findings of fact and conclusions of law embodied in the 710 judgment."[25]

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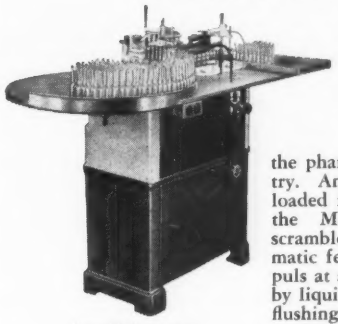

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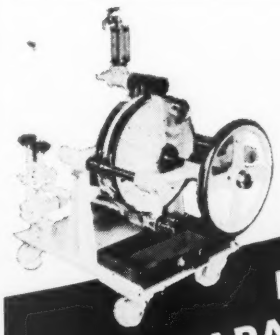

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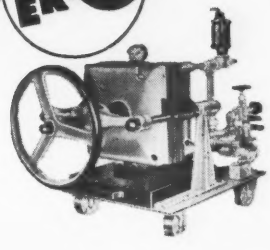

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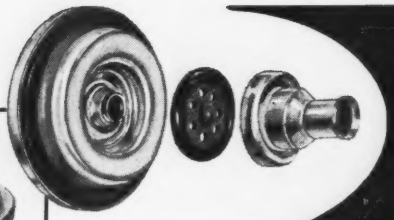

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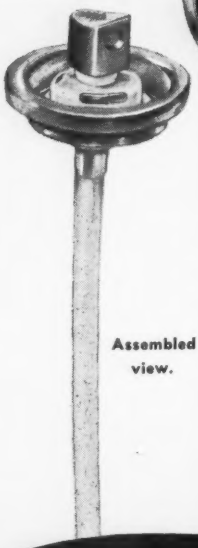

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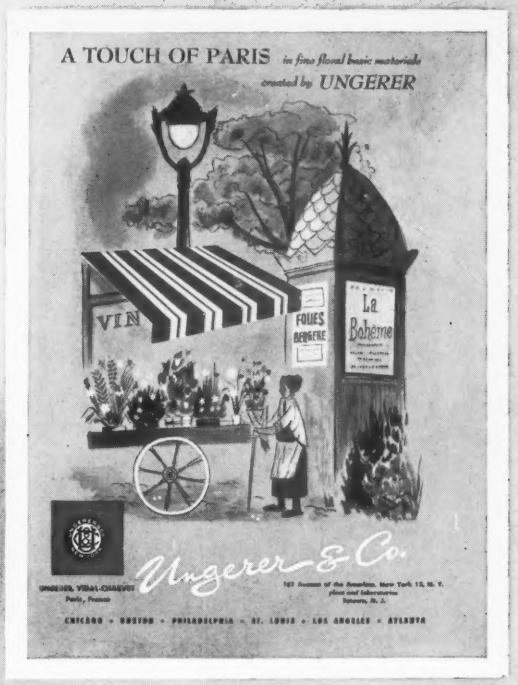
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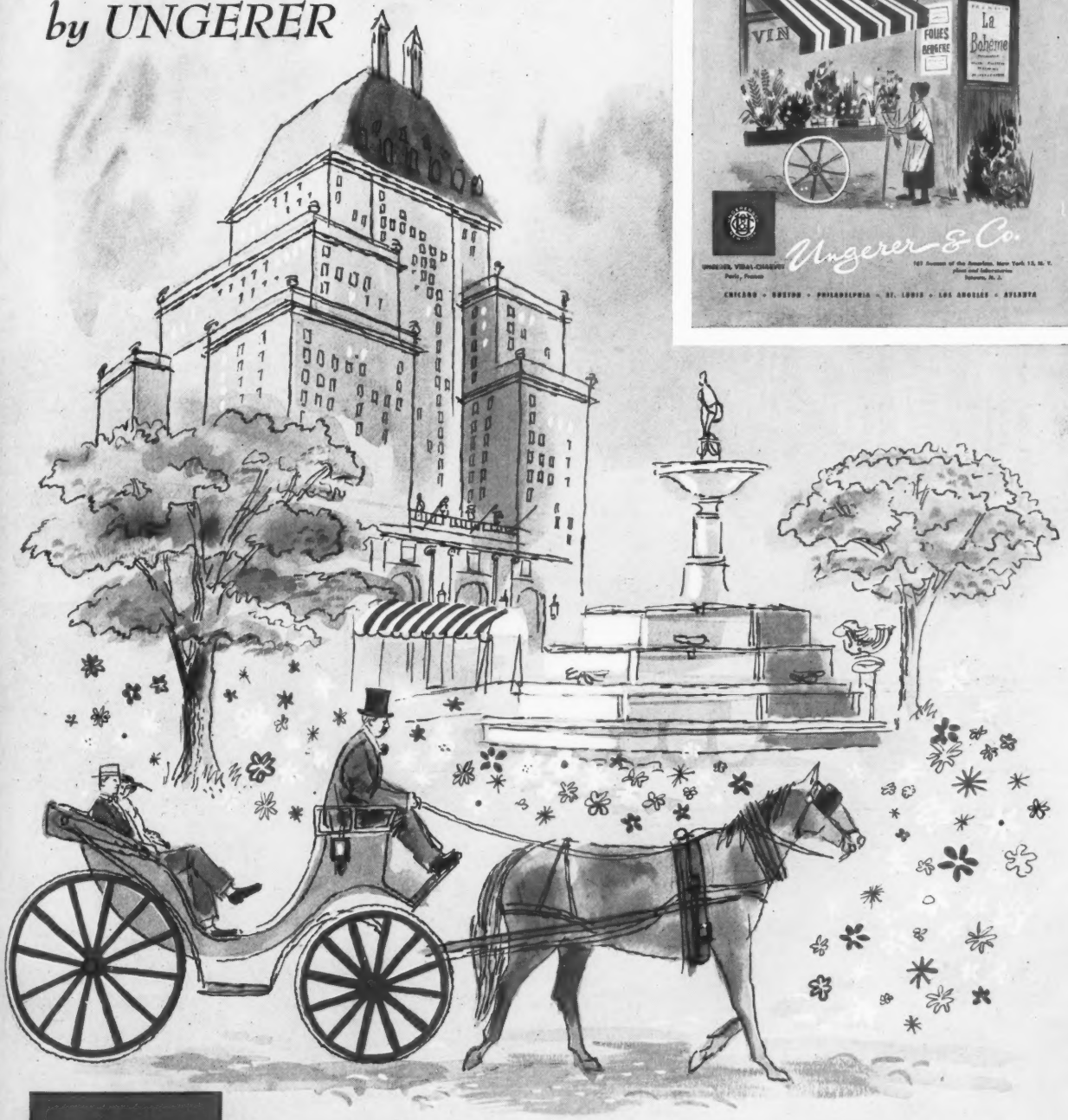

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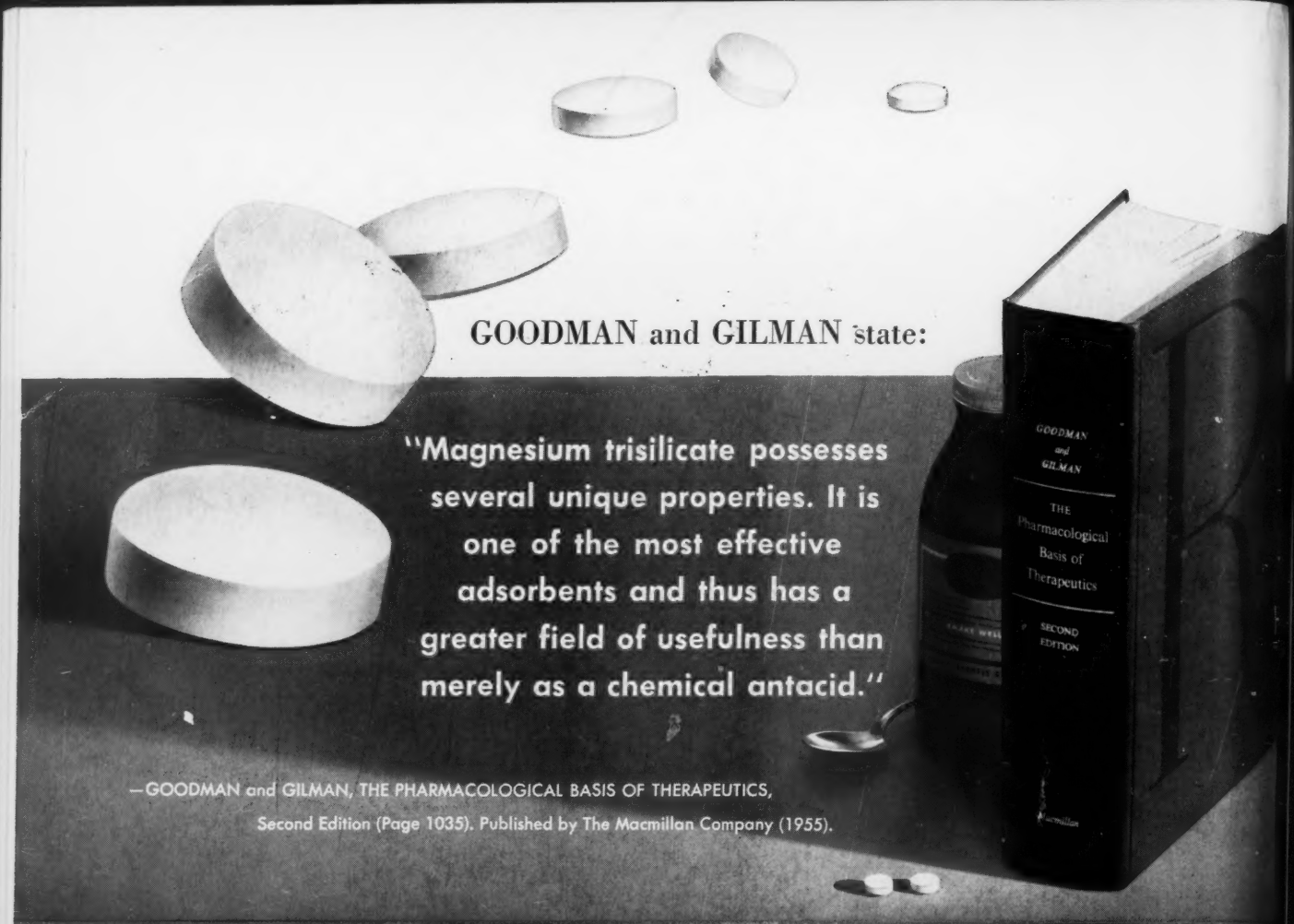
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